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ABSTRACT

This document consists of 10 issues (one year) of a newsletter intended for K-12 networking teachers. It provides a forum for the exchange of resources, applications to education, significant events, and major international, regional, and state programs and policies relevant to K-12 networking. Cover articles include: "To Liberate a Learner, Liberate a Teacher"; "Turning Swords and Plowshares into Webs, Moos, and Chats"; "The Art of Raising an Independent Learner"; "On Creating a Democratic Internet ARPANET--U.S. DoD (Department of Defense)-Sponsored Network"; "So What Do Jiminy Cricket, Big Brother, Warning Labels, and Web Meltdowns Have to Do with Equity and Quality Learning on the Internet?"; "The Return of the Village Schoolmaster: Teachers Who Feel Good About Themselves and Who Speak Up, Speak Out, Speak Honestly, and Speak Wisely"; "The Interactive School: Visions of Teaching and Learning in the JAVA Age"; "The Coming Revolution in Education"; "On Creating a Democratic Internet: Commercialization (Part Three)"; and "A Networking Strategy for School Change." (AEF)

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ED 395 574

# NetTeach News:
## Volume Three, 1995 - 1996

*by* Kathleen M. Rutkowski, Ed.

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Connecting Learners Around The Globe

# NetTeach News

APRIL/MAY 1995 VOLUME THREE, NUMBER ONE

*Most boys or youths who have had much knowledge drilled into them, have their mental capacities not strengthened, but overlaid by it. They are crammed with mere facts, and with the opinions or phrases of other people, and these are accepted as a substitute for the power to form opinions of their own: and thus the sons of eminent fathers, who have spared no pains for their education, so often grow up mere parroters of what they have learnt, incapable of using their minds except in the furrows traced for them."* Essential Works John Stuart Mill — Autobiography pp.27-28.

**Exploratorium**
URL:http://www.exploratorium.edu/

## The Captured Mind

Most children come to the formal education process as creative, curious, eager young minds. There is nothing quite comparable to the unbounded energy of a little toddler exploring his world. The young child views the world as his laboratory, and everything including bugs, dried leaves, sticks, and mud are treasures to both behold and hold.

Kindergarten and first grade are periods of adjustment when the young unshackled explorer must learn to confine his explorations to a desk or classroom but there is still tolerance for wandering. By third and fourth grade the child often sits in a cold brick building, staring out the window at the sunny world outside wishing he could get up and go outside.

The resourceful creative child learns how to survive. As the teacher stands in the front of the room lecturing, as the mechanical wall clock clicks down the interminable minutes in a controlled day, the child whose mind refuses to be captured, explores the depths of his own imagination. Every now and then he tunes in and becomes a master of probability and prediction.

## The Adult Prisoner

We teach our children that play is not learning, and that learning in school is real learning while everything else is play, homework, or a waste of time. We instruct children that a prerequisite to "successful" learning is attentive listening to adults. We scold children for their inattentiveness and rarely award them for their creativity.

When most children grow up, they hold on to these beliefs. The only learning they understand is formal, and they place little value on any knowledge or experience they acquire informally. They learn to confine their imagination and they seek to acquire skills rather than

A society that values lifelong learning needs to take take a serious look at the signals it is sends to its youngest learners. Do we really want to send the message that the only learning that matters is formal learning and that the only acceptable measurement of that learning is standardized assessments. Moreover, do we really want to send the message that their minds are sponges and it is society's task to fill that sponge with skillful information?

## If School's Out Is Learning In?

There is a growing movement to liberate learners and to promote lifelong learning and an end to the distinction between formal and informal learning. Certainly Lewis Perelman's best selling book, School's Out has promoted the most radical paradigm in this regard by essentially declaring the irrelevance of formal learning in schools. ❶

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NetTeach News

A Word from the Editor

# True Confessions or Life After Internet Addiction

*Clifford Stoll, a long time Internet traveler, has just released his new book entitled,* ***Silicon Snake Oil: Second Thoughts on The Information Highway.*** *Although I think Clifford has gone too far in his efforts to admonish against the dangers of the Internet, I commend his honesty and share at least one of his concerns namely that we who use this medium can become addicted to such an extent that we forget fundamental relationships and a basic need to live. However, unlike Stoll, I hesitate to readily reject the medium for my somewhat irrational and compulsive use or misuse of the technology.*

*Recently, I took some time away from the Internet, a moratorium on e-mail, web surfing, and gophering to spend more time with my family "living" a life off of cyberspace. One evening I simply turned off my computer and almost instantly felt "liberated". I enjoyed spending time interacting with my children, mother and husband. I actually read entire books and started a stage play using a pen and a legal-sized tablet of paper. I took time to daydream and time to walk the dog. It was pleasant not to be staring at a computer monitor and checking my many electronic mailboxes for the latest arriving messages at 1 a.m.. In fact it was so pleasant to be away from the onerous demands of cyberspactial interaction that I almost considered pulling the plug permanently like Clifford Stoll and creating a new club—CAAC (Cyberspatial Addicts Against Cyberspace).*

*I realized, however, that I had real friends in cyberspace who I wanted to hear from and communicate with and without the Internet my ability to stay in touch would be compromised. I also realized that the Internet offered me access to information and knowledge that I would not otherwise have and the ability to reach a larger audience through online publishing. I accepted that my personal challenge would be to learn how to better use this technology in my personal and professional life.*

*I wonder how many others of you out there, veteran internauts, have experienced similar experiences of burnout, turn-off, and a need to escape. I wonder how many besides myself and Clifford Stoll have taken time to evaluate how the technology has impacted on one's professional and personal life. I wonder how many of those who considered the impact of the Internet on their lives have permanently sworn off cyberspace and how many others like myself took a vacation and came back with a new attitude towards the technology.*

*Most evangelists are guilty of zealousness and protectionism.. They fear that the ignorance and fears of others will militafe against the realization of their visions and hopes. Internet evangelists are no different; they are quick to sing praise and slow to criticize.*

*In religion, one can usually distinguish the neophyte convert from the long-time believer. The neophyte wears their religion like a new suit of clothes, proudly and passionately. The long-term believer effuses a faith that is more like a patchwork quilt than a brand new garment.*

*True belief like true love is never quick or easy. We hear about the moment of religious awakening just like we hear about "love at first sight" but life instructs the true believers that those moments of certainty are followed by minutes that turn into hours, days and years of struggle for what Henry James writes is "the realization of a definitive recognition and reconciliation."*.

*Surely I am not suggesting that the Internet is any way, shape, or form comparable to God or love. The Internet does impact on the lives of a growing number of people around the world and offers the possibility of significant positive social and personal growth but only if men and women learn to use it reasonably and effectively in their normal lives, and not lose sight of the bottomlines, be it productive learning in a school, a full and satisfying life for the individual, or collaborative and cooperative communities of learners for the global society.*

*We cannot allow the technology to control our lives and steal away our personal or societal souls but rather must as individuals and as a society diligently learn to use this technology to advance the value and belief systems we hold sacrosanct. It is up to us as individuals and as a society to prioritize, delimit, and promote a responsible and rational use of this technology for the betterment of ourselves and society as a whole. This is not a time for second thoughts but a time to fully commit ourselves to a lifelong struggle to achieve a vision with an understanding that the technology is only a means to the end.*

**Editor: Kathy Rutkowski**
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## Liberate A Teacher (Continued from page 1)

To some extent, Constructionst theory and the work of Howard Gardner and others on creativity and cognitive learning tend to support the irrelevance of a traditional pedagogy that demands passivity on the part of the student and does not nurture independent and creative thought.❷ However, even Seymour Papert who advocates a significant revamping of the traditional school recognizes a legitimate function that schools can play and moreover the central position that teachers must play in any reform process,

*The central issue of change in education is the tension between technicalizing and not technicalizing, and here the teacher occupies a fulcrum position."* .❶

### The Legitimate Role of Schools

Radical new formulas to change the paradigm of learning by replacing teachers with technology and schools with home telecommunication centers fail recognize the legitimate role that schools can and do play. Schools serve a useful function by providing all children an opportunity to learn with other children and with adults who are exclusively at their service to nurture their learning. As well meaning as parents may be, they rarely have the time or training to undertake the degree of mentoring required by the learners as the learner grows. It is also understood that an individual learner benefits from collaborative and cooperative learning and schools can and do provide that setting.

Certainly new multimedia and networking technologies can support the individual learner in the home by providing access to excellent resources, adult mentors, and other collaborative learners, but most learners in the K12 community can and do benefit from learning in a learning organization.

### *The Leverage for Change*

Increasingly those who are interested in changing the paradigm of learning in schools are searching for the appropriate leverage for change. In April, the Office of Technology Assessment of the US Congress released their report, Teachers & Technology — Making the Connection. ❹ The connection that their key findings made between teachers use of technology and learning perhaps offers good guidance.

The most relevant key findings include:

- *Despite technologies available in schools, a substantial number of teachers report little or no use of computers for instruction. Their use of other technologies also varies considerably.*
- *While technology is not a panacea for all educational ills, today's technologies are essential tools of the teaching trade. To use these tools well, teachers need visions of the technologies' potential, opportunities to apply them, training and just-in-time support, and time to experiment. Only then can teachers be informed and fearless in their use of new technologies.*
- *Using technology can change the way teachers teach.*
- *Helping teachers to use technology effectively may be the most important step to assuring that current and future investments in technology are realized.*
- *Most teachers have not had adequate training to prepare them to use technology effectively in teaching. Currently, most funds for technology are spent on hardware and software. ...On average, districts devote no more than 15 percent of technology budgets to teacher training.*
- *A majority of teachers report feeling inadequately trained to use technology resources, particularly computer-based technologies. Although many teachers see the value of students learning about computers and other technologies, some are not aware of the resources technology can offer them as professionals in carrying out many aspects of their jobs.*

### The Need for Training

There is compelling evidence based on these findings and other research and field work that training teachers in the use of technology may be the key to radically changing the way learners learn in schools.❺ Of course, teacher training must be met with an adequate administrative support structure that allows teachers to use technology creatively with their students once they have reached an appropriate degree of familiarity with the technology. However, networks will offer teachers a forum to reveal the constraints that not only subjugate learners but teachers as well.

### The Real Challenge

Teachers have always been concerned about learners and have dedicated their lives to helping young minds reach to their potential. New technologies offer them the tools to better understand learners and their different cognitive styles as well as to develop better strategies to impact those different learners and help them all reach to their potential. In effect, new technologies, particularly networking technologies can help teachers nurture lifelong learning much more effectively.

The critical challenge is providing both teachers and learners adequate access and training to new technologies. Together eager young learners and their caring teachers can help the rest of society better understand the process of learning and the importance of education to any society.

* * * * * * * * * * * * * *

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❷ *The Unschooled Mind—How Children Think & How Schools Should Teach*, Howard Gardner (Basic Books, 1991)

❸ *Constructionism*, Edited by Idit Harel and Seymour Papert (Norwood, New Jersey, Ablex Publishing Company, 1991)

❹ *The Children's Machine, Rethinking School in the Age of the Computer*, Seymour Papert (Basic Books, 1993)

❺ U.S. Congress, Office of Technology Assessment, *Teachers & Technology — Making the Connection*, OTA-EHR-616 (Washington, DC: U.S. Government Printing Office, April 1995)

❻ Farnet/Cosn, *Building Consensus/Building Models: A Networking Strategy for Change*, NSF Grant No. Red-9254947 (March 1994)



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NetTeach News

Professional Development

# TEACHING TEACHERS TECHNOLGY

## by Stephanie Stevenson

### *Professional Development*

Today's teachers are constantly asked to bridge the gap between educational theory and classroom teaching. This not only requires keeping current on new theories of pedagogy, cognitive development, assessment and corps curriculum areas but increasingly demands upgrading technological skills. Recently, Richard Riley, the US Secretary of Education, stated,

*"Schools and students have changed significantly in recent years, but teachers are still at the heart of instruction. If, as a nation, we expect to prepare all students for the 21st century, we must provide teachers with ongoing opportunities to be the most informed, the most capable, and the most inspiring classroom leaders possible."*

The Secretary is not alone in his recognition that ongoing professional development is a critical component of any successful educational program. In April, the Office of Technology Assessment of the US Congress, released the report, *Teachers & Technology — Making the Connection.* ( OTA-EHR-616 , Washington, DC: U.S. Government Printing Office, April 1995) Several key findings emphasized the importance of supporting more effective teacher training, especially in the use of technology, to systemic educational reform.

### *Critical Components*

The most effective training programs around the country all seem to include some recurring basic elements. These elements include:

- *a long-term strategy to improve teaching and learning based on the best available research and practice in teaching, learning and leadership;*
- *a focus on teachers as central to overall school reform,yet include all members of the school community;*
- *a respect and commitment to cultivate teachers' intellectual capacities and enhance their skills and knowledge in pedagogy, content and leadership;*
- *an active involvement of teachers in planning and an ample provision of time and resources for change in the classroom;*
- *a component to evaluate impact on teacher effectiveness, student learning and performance, and in upgrading educational standards.*

### *New Technologies*

New technologies are proving to be useful and cost effective in supporting ongoing professional development. Networking technologies in particular seem to offer classroom teachers with a quick and easy access to other professionals in classrooms, universities, corporations, and government agencies around the world. Networking is now supporting teacher development and training by:

- *providing access to the best available sources of research in the concepts of teaching, learning and other active educational concerns;*
- *recognizing the concerns of teachers as being central to overall educational reform;*
- *allowing many different segments of the educational community to contribute ideas and express differing points of view;*
- *providing new forums for teachers to enhance their skills and knowledge in pedagogy, content and leadership;*
- *supporting flexible time frames that assist teachers in developing curriculum and training components;*
- *introducing technological tools, concepts and resources in a format that promotes hands-on, self-directed learning;*
- *assisting in evaluations of impact on teacher effectiveness, student learning levels, and attainment of enhanced educational standards.*

### *Online Resources*

Richard Smith, the creator of the highly successful online workshops called "Navigating the Internet." stated,

*"Telecommunications technologies have provided a vast array of teaching opportunities for (those) educators and librarians charged with providing information to students, staff, researchers and faculty. The technology permits expanded communication among teachers/ student, and also provides a means of increasing teacher/teacher and student/ student communications."*

Training using networking exhibits some benefits over traditional classroom instruction and also over distance education courses using other telecommunication technologies.. Some of these benefits include:

- *Immediacy -- especially compared to print-based materials and correspondence courses*
- *Sense of group identity -- where the computer system becomes a meeting place for students*
- *Improved dialogue -- students correspond more than in traditional classroom setting*
- *Improved instructor control -- the computer system can produce online schedules and records of planned activities.*
- *Active learning -- student participation is enhanced and improved*

Clearly, uses of networks for professional development can be beneficial to the practitioner in the classroom, and give administrators a new tool for training. However, there is still a legitimate need for hands-on workshops and professional "real" (as opposed to "virtual") conferences, and other forms of distance education. that together with interactive networking provide a more complete and effective professional development program.



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# A SELECT TOUR OF ONLINE COURSES

## by Stephanie Stevenson

*The following are some of the many training opportunities currently to be found on the Internet that has helped me in my personal professional development.. Several of these offer the ability of receiving graduate level course credit. In such cases there is generally a fee involved for participation. Others provide very thorough training for which an inservice component could be created with the completed assignments being used to document progress. The beauty of these training opportunities is that they can be done with students in the classroom; while also familiarizing educators with the new tools, techniques and applications needed to produce reform in the classroom.*

### Navigating The Internet

Richard Smith developed his course, Navigating the Internet, for on-line training in the use of the Internet.

Course Review: *Originally a course delivered via a Listserv. All lessons now stored on a gopher. It only covers gopher access, though WWW is mentioned briefly at the end. Hence it seems rather limited now. Some of the facts and figures are rather dated. The numbering of the lessons is erratic some numbers are repeated; some missing. A chatty, informal style is adopted. The last few lessons discuss ways to customize various clients, and may be less useful for a general audience as only character-based clients are discussed.*

Contact-Name: Carnegie Library of Pittsburgh
Contact-Email: smithr@clp2.clpgh.org
Cost: Free
Access-Type: Gopher
To Access Type:
*gopher://cwis.usc.edu/11/Other_Gophers_and_Information_Resources/Gopherin*

### *The RoadMap to the Internet*

*The Roadmap to the Internet*, a very popular online course developed and moderated by Patrick Crispen (pcrispe1@ua1vm.ua.edu) of the University of Alabama. The course provides lessons on the use of and resources available on the Internet. To participate in the Roadmap workshops, send an e-mail message to:

LISTSERV@UA1VM.UA.EDU.
Be certain to include the command: GET MAP PACKAGE F=MAIL in the body of the message.

The workshop files are set up so that people can get the lessons in one week blocks, and the *GET MAP PACKAGE command* will send them two letters telling them how to get these "blocks."

For back copies of the Roadmap lessons, send a message to:

LISTSERV@UA1VM.UA.EDU.

In the main body of the message write the command:

*GET FILENAME FILETYPE F=MAIL*

Workshop Schedule:

**WEEK1**

| *filename* | *filetype* | *description* |
|---|---|---|
| *MAP01* | *LESSON* | *WELCOME* |
| *MAP02* | *LESSON* | *LISTSERV FILE SERVER COMMANDS* |

**WEEK2**

| *filename* | *filetype* | *description* |
|---|---|---|
| MAP03 | LESSON | LEVELS OF INTERNET CONNECTIVITY |
| MAP04 | LESSON | E-MAIL |
| MAP05 | LESSON | LISTSERVS |
| MAP06 | LESSON | OTHER MAIL SERVERS |
| MAP07 | LESSON | NETIQUETTE |

**WEEK3**

| *filename* | *filetype* | *description* |
|---|---|---|
| MAP08 | LESSON | USENET |
| MAP09 | LESSON | SPAMMING AND URBAN LEGENDS |
| MAP10 | LESSON | INTERNET SECURITY |
| MAP11 | LESSON | TELNET (PART ONE) |
| MAP12 | LESSON | TELNET (PART TWO) |

**WEEK4**

| *filename* | *filetype* | *description* |
|---|---|---|
| MAP13 | LESSON | FTP (PART ONE) |
| MAP14 | LESSON | FTP (PART TWO) |
| MAP15 | LESSON | FTPMAIL |
| MAP16 | LESSON | FTP FILE COMPRESSION |
| QUIZ1Q | LESSON | POP QUIZ |
| MAP17 | LESSON | ARCHIE |
| MAP17B | LESSON | FTP SITES |
| QUIZ1A | LESSON | POP QUIZ ANSWERS |

**WEEK5**

| *filename* | *filetype* | *description* |
|---|---|---|
| MAP18 | LESSON | GOPHER (PART ONE) |
| MAP19 | LESSON | GOPHER (PART TWO) |
| MAP20 | LESSON | BOOKMARKS AND BOOKLISTS |
| MAP21 | LESSON | VERONICA |
| MAP22 | LESSON | GOPHERMAIL |

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NetTeach News

Online Courses

# The Tour Continues (from p.5)

**WEEK6**

| *filename* | *filetype* | *description* |
|---|---|---|
| MAP23 | LESSON | WWW *(PART ONE)* |
| *MAP24* | *LESSON* | *WWW (PART TWO)* |
| *QUIZ2Q* | *LESSON* | *POP QUIZ* |
| *MAP25* | *LESSON* | *ADDRESSES SEARCHES AND FINGER* |
| *NEAT* | *LESSON* | *MAP-EXTRA: NEAT STUFF TO CHECK OUT* |
| *ADVERT* | *LESSON* | *MAP-EXTRA: ADVERTISING ON THE INTERNET* |
| *MAP26* | *LESSON* | *IRC/MUDs/MOOs AND OTHER "TALKERS"* |
| *SMITH* | *LESSON* | *GUEST LECTURE -- RICHARD SMITH* |
| *QUIZ2A* | *LESSON* | *POP QUIZ ANSWERS* |
| *MAP27* | *LESSON* | *THE FUTURE ...* |

If you want the the lessons e-mailed to you in one-week blocks,simply sending an e-mail message to:

LISTSERV@UA1VM.UA.EDU.

In the main body of the message include the command: GET WEEK# PACKAGE F=MAIL. Be sure to replace the # with the week number of the block that you want to retrieve. For example, in order to receive "WEEK2" files. your command would read:

GET WEEK2 PACKAGE F=MAIL

After you send your message, a computer at the University of Alabama will process your letter usually within 24 hours. The system will then e-mail you the particular one-week block of lessons that you have requested.

## MSU's Online Courses

Montana State University's National Teacher Enhancement Network offers graduate-credit science and mathematics courses to teachers nationally. Teachers are able to participate in the telecomputing courses from convenient home or work locations by dial-up modem connections or Internet access.

The Network provides teachers with high quality graduate science courses taught by university scientists, engineers, and mathematicians. It also enhances professional networking nationwide between science teachers and active research scientists. Course topics are selected based on input from science teachers, identified needs from national surveys and reports, and current events taking place in science and technology.

Courses are team-taught by the university faculty and an active science teacher. A variety of courses are offered each semester. Courses already developed include:

Snow Science
Water Quality
Relativity
Scientific Visualization
Images of Earth

Contact Montana State University Extended Studies for course schedules and registration information by phoning (406) 994-6550 or sending e-mail to ZXS7001@MSU.OSCS.MONTANA.EDU.

## Visualization and Communications Tools for Math/Science

Visualization and Communication Tools for Mathematics and Science Teaching is one such course being expanded this summer. This Math 580 course provides two semester hours of credit. It will be offered from June 19 - July 28 1995. The tuition and fees for this course are $200, training materials are $60.

As part of this program, Participants will:

1) Learn about image processing and analysis
2) Using the program NIH Image 1.55

Measuring Mars: A Visit to Olympus Mons
Measuring Global Sea Surface Temperatures
Exploring Phytoplankton Pigment Concentrations
Review NASA's SIR-C Educational CD-ROM
Mission to Planet Earth
How Radar Imaging Works What Is SIR-C?
Looking At Radar Images
Exploration and Discovery
Explore Euclidean and Non-Euclidean Geometries
Using Exciting New Tools
Explore Euclidean Geometry with The Geometer's Sketchpad
Explore Hyperbolic Geometry with Non-Euclid
Explore Fractal Geometry with:
Fractograph
Fractal Artist
Fractal Coastline
Explore the Internet Using
Mosaic Netscape
Fetch
Window to Blue Skies
mail, Listservs, Conferencing Tools & More

Participants must have have regular access to a Macintosh computer (LC or better) with an attached CD-ROM drive and an Internet connection supporting telnet, gopher and email and be a certified teacher at the K-12 level with an interest in mathematics and science education and computer technology.

*(Continued on page 7 )*



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# Online Training Continued

The textbook to be used in conjunction with these exercises is "Visualization of Natural Phenomena", by R.S. Wolf & L. Yaeger. It is included as part of the cost of the course and materials. Other necessary materials include: CD-ROM:, SIR-CED Pre-Launch CD-ROM, Monthly Mean Distributions of Satellite-Derived Sea Surface, Temperature and Pigment Concentration (5 CD-ROM Set), and a suite of software application tools.

To request registration information, send an email message to <dave@mathfs.math.montana.edu> indicating your interest and describing your equipment and network connection.

## ISTE/Univesity of Oregon Courses

ISTE, The International Society for Technology in Education in conjunction with the University of Oregon and the Oregon State System Office of Independent Study located at Portland State University, Portland, Oregon offer a series of graduate-level Distance Education courses. The purpose of these courses is to provide staff development and leadership training for educators who do not have local access to world-class leaders and staff development opportunities in computers-in-Education.

Credit for these graduate course is granted through the University of Oregon in Eugene, Oregon or through Portland State University in Portland, Oregon. Transcripts will be issued by the Registrar's Office to the university you select. Depending on the rules of the local university it may be possible to use these transfer credits in Master's and Doctoral degree programs.

There are a variety of advantages with ISTE's graduate courses. For example, you are able to set your own due dates for assignments. The allowable time for completing the course is much longer than for a typical on-campus course. You can customize your own learning and work schedules and set your own goals. Students can take advantage of learning telecommunication skills.

Assignments are flexible enough that you can adapt them to your own particular situation. You can enroll in a course at any time. A broad range of courses are always available. And, you also receive a $50 coupon good towards any ISTE products when you complete a course. Courses currently being offered include:

Clarisworks for Educators
Learning Linkway/Linkway Live
Exploring the Internet
Introduction to Logo for Educators
Telecommunications and Information Access
Learning HyperCard and HyperTalk Programming
Planning for Technology in Schools
Fundamentals of Technology in Education
Computers and Problem Solving
Introduction to AppleWorks for Educators
PageMaker for Educators (Macintosh)
Computers in Mathematics Education
Computers in Composition
Effective Inservice for Instructional Use of Computers in Education
Introduction to Microsoft Works for Educators
Software Sampler I

The three quarter hour graduate level tuition is $405, and the four quarter-hour graduate level tuition is $540. For non-credit students tuition is reduced to $345 for the three quarter hour graduate level tuition and $460 for the four quarter-hour graduate level tuition. For more information contact via e-mail: ISTE@Oregon.uoregon.edu.

## Other Opportunities

These then are just a few of the offerings concerning teacher development that can be found on the Internet. The combined resources to be found there are as vast as the Internet itself. Check with local universities and on the bulletin boards of public educational network systems as well as the education sections of community networks. These resources are growing on a daily basis and many major corporate giants such as MCI, SPRINT, AT&T, and Bell are also now taking a leadership role in this development.

The common goal is to make the Internet something that is easy to use, versatile and provides access to the general public. Computers and computer technology have now become an integral part of our daily lives. More and more people are discovering the potential of the Internet. Soon will come a day when there are more computers than there are people.

Most importantly for teachers widespread access also will support collaboration of educators from MANY diverse interdisciplinary backgrounds, cultures, philosophies and perspectives. Because of this; teachers are already able to teach and pass on information to learners around the world in a myriad of ways that will forever change education from the traditional teacher/classroom environment to a virtual classroom with no walls.

*Stephanie Stevenson teaches at the Holly-Navarre Elementary School in Navarre, Florida. She is on the CoSN curriculum Committee and has presented at Conferences around the country. She is pioneering the use of advanced networking technologies and tools with elementary age students.*



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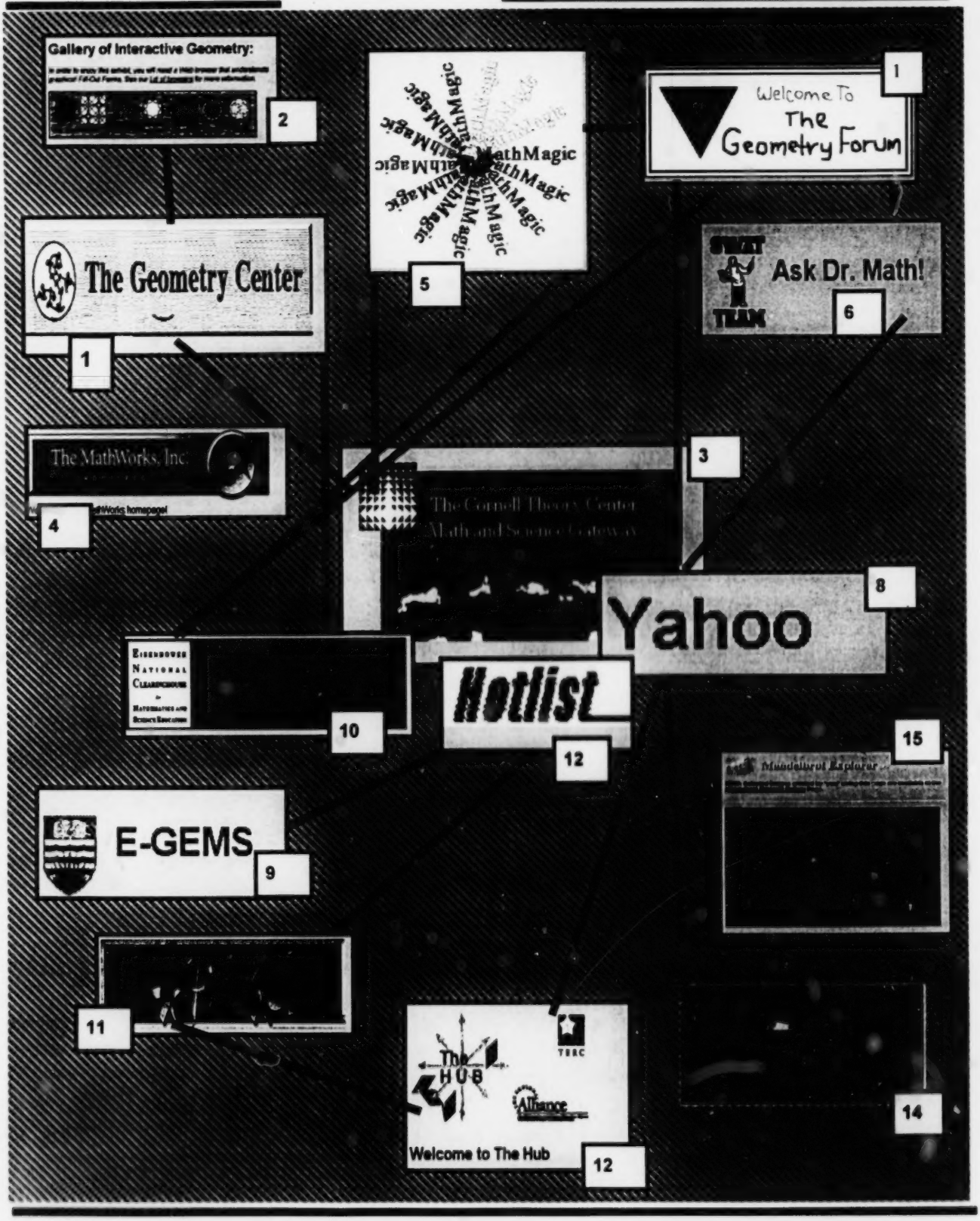
NetTeach News

# The K12 Math Web

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## The Math Web

### ❶THE GEOMETRY CENTER
http://www.geom.umn.edu/

The Geometry Center is a mathematics research and education center at the University of Minnesota, funded by the National Science Foundation as part of the Science and Technology Research Center Program. Geomview-users@ geom.umn.edu (for requests to be added to the list use geomview-users-request@geom.umn.edu)

### ❷Gallery of Interactive Geometry
http://www.geom.umn.edu/apps/gallery.html

A page which contains visualization projects.

### ❸Cornell Theory Center Math and Science Gateway
http://www.tc.cornell.edu/Edu/MathSciGateway/

This Gateway provides links to resources in mathematics and science for educators and students in grades 9-12

### ❹MATHWORKS Home Page
http://www.mathworks.com/

MathWorks produces MATLAB, a software tool that integrates numerical analysis, matric computation, signal processing, and graphics.

### ❺MATHMAGIC
http://forum.swarthmore.edu:80/mathmagic/

Mathmagic is a K12 network-based math project developed in El Paso, Texas by Alan Hoddon. It posts challenges in each of four categories (K-3, 4-6, 7-9, and 10-12) and these problems are solved by registered teams. To subscribe to the list, send a message to <majordomo@forum.swarthmore.edu> In the main body of the message, write subscribe mathmagic-X-Y-open where X-Y is either K-3, 4-6, 7-9, 10-12 or general.

### ❻Ask Dr. Math
http://olmo.swarthmore.edu/dr-math/dr-math.html

Students and renowned mathematicians answer K12 student math questions. Students are encouraged to write to dr.math@forum.swarthmore.edu

### ❼The Geometry Forum
http://forum.swarthmore.edu/
This web focuses on geometry and math education and is funded by the National Science Foundation and located at Swarthmore College.

### ❽YAHOOS Math Index
http://akebono.stanford.edu/yahoo/Science/Mathematics/

### ❾E-GEMS
http://www.cs.ubc.ca/nest/egems/home.html

Electronic Games for Education in Math and Science. A collaborative effort by scientists, educators, and professional video hgame and educational software developers to do research on and develop teaching material that integrates video games and computer-based explorations with existing classroom practices. (Grades 4-8)

### ❿Eisenhower National Clearinghouse Digital Curriculum Lab
http://www.enc.org/

Provides information about all types of instructional resources regarding K-12 mathematics and science.

### PBS MATHLINE
http://www.pbs.org/learning/mathline/mathline.html
NCTM-standard activities for students and teachers.

### ❶❶EXPLORER
http://unite2.tisl.ukans.edu/
Access to curriculum guides, software, and all sorts of interesting projects.

### Mathematics Experiences Through Image Processing
http://www.cs.washington.edu/research/metip/
METIP allows students to manipulate digitized images of their choice. Software is available on the web site

### MATHMOL
http://www.nyu.edu/pages/mathmol/

### ❶❷The Hub.
http://hub.terc.edu/

Internetworked resourcefor mathematics and science educationfunded by the Eisenhower RegionalConsortia and operated by TERC

### EINET GALAXY -- MATHEMATICS
http://galaxy.einet.net/galaxy/Science/Mathematics.html

### WWW Virtual Library--Mathematics
http://info.cern.ch:80/hypertext/DataSources/bySubject/Mathematics/Overview.html

### ❶❸Franklin Museum -- HOTLIST Math
http://sln.fi.edu/tfi/hotlists/math.html

Excellent Links to Various Lesson Plans and Neat Math Game places.

### ❶❹MegaMath
http://www.c3.lanl.gov/mega-math/welcome.html

Allows young learnersto explore complex math problems usingengaging activities.

### ❶❺Mandelbrot Explorer
http://www.ntua.gr/mandel/mandel.html
An interactive web page that allows students to investigate the Mandelbrot



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NetTeach News

# For Kids Only

**KIDPUB** — a place for kids to publish their stories.
URL: http://www.en-garde.com/kidpub

**THE FRANKLIN MUSEUM** — Great Place for a Visit Any Day! Check out the virtual exhibits and the HOTLISTS.
URL:http://sln.fi.edu/tfi/welcome.html

**THE HEART: A VIRTUAL EXPLORATION** — (Good Spot for HS Biology Students)
URL:http://sln.fi.edu/biosci/heart.html

**HOTLIST** — Pointer to educational hotspots.
URL:http://sln.fi.edu/tfi/hotlists/kids.html

**KIDS DID THIS** — Student Productions and Creations
URL:http://sln.fi.edu/tfi/hotlists/kids.html

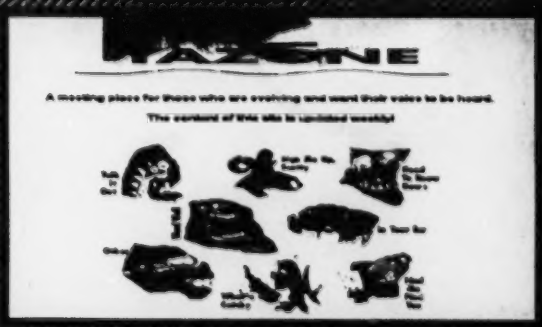
**INTERACTIVE THINGS TO DO**
URL:http://sln.fi.edu/tfi/hotlists/interactive.html

**EARTH VIEWER** — You choose the view.
URL:http://www.fourmilab.ch/earthview/vplanet.html

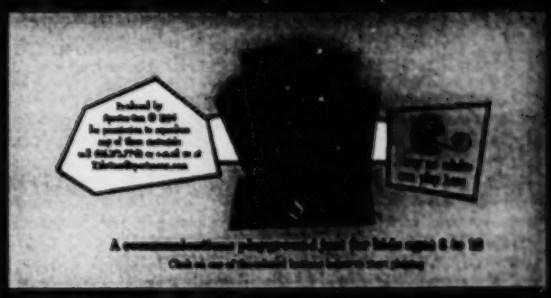
**MEGAMATH** — Have Fun With Math
URL:http://www.c3.lanl.gov/mega-math/

**THE VOLCANO PAGE** —
URL:http://www.geo.mtu.edu/~mtdolan/volcano/volcano.html

**CRAYON** — Create your own newsletter.
URL:http://sun.bucknell.edu/~boulter/crayon/




**KidsCom**
A communications playground just for kids 8 to 12
(URL:http://www.spectracom.com/kidscom/ )



**YAZONE** – a new site for Gen-Xers
URL:http://www.spectracom.com:80/yazone/

**KIDEOPEDIA** — An online kid's encyclopedia
URL:http://199.2.210.97/kidopedia.html

**HANDS-ON CHILDREN'S MUSEUM HOTLIST** - - The Hands-On Children's Museum of Olympia, Washington has an online exhibit called Ocean Odyssey (For Age 10 & Under)
URL:http://www.wln.com/~deltapac/ocean_od.html

**LANL SCIENCE AT HOME** —Science Projects for the family.
URL:http://education.lanl.gov/SE/RESOURCES/Science.at.home/Contents.html

**UNCLE BOB'S KIDS PAGE** — Uncle Bob has really done a super surfing job for kids—you name he's found it. (Boomerang Page, Muppets WWW, , Rollar Coasters)
URL:http://gagme.wwa.com/~boba/kids.html

**THE EXPLORATORIUM** — Check out the Learning Studio's Virtual Exhibits (Mutant Fruit Flies, Vocal Vowels, etc.)
URL:http://www.exploratorium.edu/

**SPACE SHUTTLE** — Status Reports of current flights and history of past.
URL:http://www.amdahl.com/internet/events/shuttle.html

**CHILDREN'S PAGE** — Great Links.
URL:http://www.comlab.ox.ac.uk/oucl/users/jonathan.bowen/children.html



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TECHNOTES

## VRweb Due In June

GRAZ, Austria (26th April 1995) - IICM, home of Hyper-G, NCSA, home of Mosaic, and the University of Minnesota, home of Gopher, today jointly announced the development of VRweb, a new three-dimensional Internet browser based on the emerging VRML standard for 3D objects on the World-Wide Web.

The Virtual Reality Modeling Language (VRML), is a non-proprietary, platform-independent file format for 3D graphics on the Internet, based on Silicon Graphics' Open Inventor file format. The three cooperating institutions endorse the VRML standardisation process and support efforts to make VRML applications widely available.

The VRweb viewer is based on the Harmony 3D Scene Viewer for Hyper-G and is designed to work in concert with popular World-Wide Web browsers, such as Mosaic and Netscape, as well as Hyper-G and Gopher clients. It allows users to interactively explore 3D models of objects, virtual worlds, and complex 3D visualisations and follow hyperlinks embedded in them. In conjunction with the Harmony client for Hyper-G, VRweb also supports interactive hyperlink creation in 3D models.

VRweb will be made available in source code form (copyrighted, but free for non-commercial use), complementing forthcoming commercial VRML browsers and providing a platform for research and experiment. A first release of VRweb is scheduled for June 1995 for UNIX platforms and shortly thereafter for Windows NT.

IICM, NCSA, and the University of Minnesota, all non-profit organisations with considerable experience of Internet information systems, make natural partners. The VRweb VRML browser is the first joint project between the three institutions.

The Institute for Information Processing and Computer Supported New Media (IICM), part of Graz University of Technology, Austria, is home to Hyper-G, a multi-protocol (WWW, Gopher, Hyper-G) Internet information system, which integrates hyperlinking, hierarchical structuring, sophisticated search, and information management facilities into a single, tightly-coupled environment. Hyper-G has supported 3D models and navigational facilities for several years.

The National Center for Supercomputing Applications (NCSA), a unit of the University of Illinois at Urbana-Champaign, is dedicated to advancing leading-edge technologies in information and high performance computing and communications in academia and industry. The center receives major funding to support its research from the National Science Foundation, the Advanced Research Projects Agency, NASA, corporate partners, the State of Illinois, and the University of Illinois. NCSA is developer of the popular Mosaic Internet browser and the most widely used WWW server, NCSA httpd.

The University of Minnesota is the home of Internet Gopher, a distributed document search and retrieval system which combines structured navigation and full text searches. The Gopher team recently released Unix and Macintosh GopherVR clients to provide a 3D interface to existing Gopher servers. The GopherVR interface represents collections of documents as 3D scenes to make it easy to visualize relationships between the documents. VRML is a natural extension to GopherVR since VRML scenes can be treated as another type of document in a Gopher hierarchy.

## BETA MINUET IS AVAILABLE

The University of Minnesota - Distributed Computing Services recently released the Beta_18 version of Minuet 1.0 .

Minuet is the Minnesota Internet User's Essential Too, and is an integrated network application for the IBM PC that does E-Mail, NetNews, Gopher, FTP, Telnet, and now World Wide Web too. It runs on IBM PC's under DOS, from the first lowly 4.77Mhz with 512k up to the latest Pentium machines. It comes with its own TCP stack, but you need to supply a packet driver.

Minuet can run in text-only mode on any PC. Or if you have a EGA, VGA, or Super-VGA display, Minuet now runs in graphics mode too, adding a bit of excitement to Internet browsing. It fully supports Web GIF and JPEG images in up to 65,536 displayed colors. (JPEG requires at least a 386 CPU).

Minuet is distributed as shareware. If after trying the program for 15 days, you decide to continue using it, you must register your copy by sending us $50. Site licences are also available. For further information contact:

**software@boombox.micro.umn.edu f**

You can get Minuet by FTP from: minuet.micro.umn.edu in /pub/minuet/latest/minuarc.exe. This is a self-extracting archive that expands to the

## New at NETCENTER

Spry's Internet-On-A-Disk and Spry Air Mosaic Browser are now available from Gateway's NETCENTER in a 1.4 MB file. To download the file point to: **URL:http://netcenter.com** and head down the page to DOWLOAD MOSAIC-AIR MOSAIC. You can also download Microsoft's Internet Assistant which can turn your copy of Microsoft Word into a new Internet Browser.



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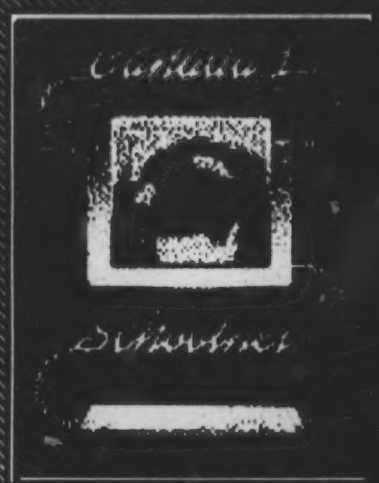
## ☺CHAMPLAIN

Champlain is a new search mechanism to be used to search through Canadian government resources available on the Internet. Using forms, you can enter a query such as <education> and find all sorts of uses servers in Canadian with information relevant to your subject of search. A very easy and usefull search engine. You can have your answers written in either French or English. (A good place for those studying French to practice translations.)
**URL: http://info.ic.gc.ca/champlain/champlain.html**



## ☺Canada's SCHOOLNET

SchoolNet is a cooperative initiative of Canada's provincial, territorial and federal governments, educators, universities and colleges and industry. It aims to link all Canada's 16,000 plus schools to the electronic highway as quickly as possible SchoolNet Resources
**URL:http://schoolnet.carleton.ca/english/schlnet.html**

**The SchoolNet Gopher**
URL: gopher://schoolnet.carleton.ca:419/
**SAE's(Society of Automative Engineers) World in Motion Learning Kit**
URL: http://schoolnet.carleton.ca/english/worldinmotion/index.html
**Canadisk Canadian History Gallery**
http://schoolnet.carleton.ca/cgi-bin/schoolnet/canadisk.pl
**Canadian Space Information**
http://schoolnet.carleton.ca/english/astronauts/astronauts.html

## ☺LEARNNet

World-wide web server oeprated by the Information Networks Division of the Department of Education, Culture and Employment,
Government of the Northwest Territories, Canada.
**URL: http://siksik.learnnet.nt.ca/default.html**

**Letter from the Deputy Minister**
URL:ttp://siksik.learnnet.nt.ca/ECE/Introduction.html
**CTS Curriculum Document Index**
http://siksik.learnnet.nt.ca/CTS/CTSindex.html

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# Canadian EduTools

**CANADA**— Presents the WWW from the Canadian Perspective.
URL:http://www.docker.com/canada.HTML

**CANADA's PARLIAMENT**
**URL: http://www.cisti.nrc.ca/programs/pio/intro.html**

**Canadian Museum of Civilization**
URL:http://www.cmcc.muse.digital.ca/cmc/cmceng/welcmeng.html

☺**NAIS MAP** — With NAISMap you can view and manipulate NAtional Atlas spatial data and construct your own map of Canada.
URL:http://ellesmere.ccm.emr.ca/wnaismap/naismap.html

☺**Model Forest Program**
The Canadian Forest Service has put up this experimental web page which allows you to click to detailed maps and slide shows on forests around Canada as well as access information on their gopher server.
URL:http://ncr157.ncr.forestry.ca/mf.htm

☺**ATLAS of CANADIAN COMMUNITIES** — Digital Atlas contains useful information about communities throughout Canada
http://ellesmere.ccm.emr.ca/ourhome/home.html

**Assiniboine Community College**
http://www.assiniboinec.mb.ca/

**W.A. Porter Collegiate Institute, Scarborough, Ontario**
URL: http://www.interlog.com/~lhbulmer/school/home.html
**John Ware Jr. High, Calgary,Alberta**
URL: http://www.tcel.com/~pstobo/ware.html
**Vincent Massey High School**
URL: http://www.docker.com/~whiteheadm/vm.html

Assiniboine
COMMUNITY COLLEGE



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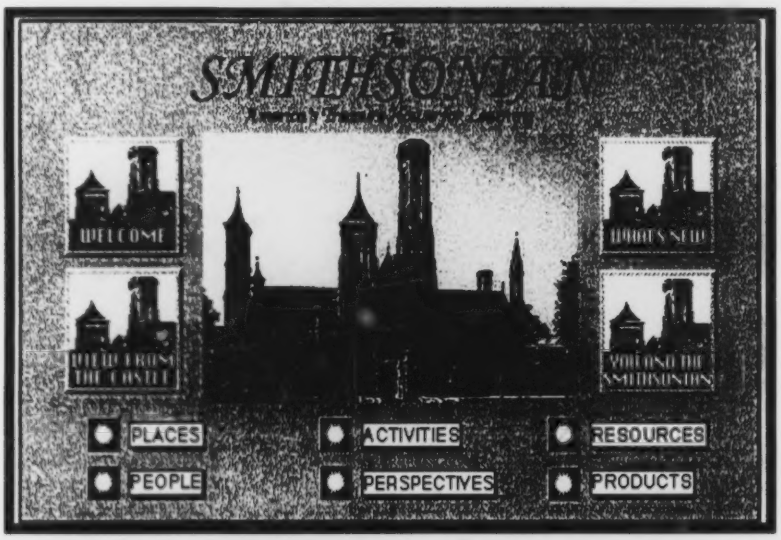
THE VIRTUAL MUSEUM

# THE *Electronic* SMITHSONIAN




**Smithsonian Home Page — URL: http://www.si.edu**

On May 8, 1995, the new Smithsonian Institution "Home Page" was released to the public. Speaker of the House, Newt Gingrich and the Secretary of the Smithsonian, I. Michael Heyman conducted the demonstration of this new site.

**The Smithsonian Web site is found at *http://www.si.edu*** and there are several mirror sites. The Home Page has several components including,

**Welcome** — This includes a brief video of Secretary Heyman welcoming the visitor to the Online Smithsonian. This requires software that can run audio and visual information. It provides links to an Overview of Smithsonian Museums, the Encyclopedia Smithsonian (faqs on the Smithsonian), and information on a Planning a Visit.

**View from the Castle** — This section contains a monthly message from the Secretary of the Smithsonian on topical issues. It may be viewed as text or played using audio software. Links here to News Releases from the Smithsonian.

**What's New** — This section contains a sampler of Smithsonian exhibitions and activities for each of the museums and galleries and the National Zoo. It also includes new additions to the Smithsonian Web Server, and press releases.

**You and the Smithsonian** — This gives information about membership, donations, fellowships and internships.

**Places** — Here's the spot to begin your tour of the many Smithsonian Museums, galleries, research centers, and offices. There is a locator map of The Mall.

Additionally, every museum posts samples from their permanent exhibits (visual and text), some research activities and their events calendars. Currently, all fourteen of the Smithsonian Museums have their own individual Home Pages.

There are between one and two thousand "electronic pages" in this Electronic Smithsonian. The information covers a variety of subject areas, and there are over 2,000 images. The overview section is available in Spanish, German, and French versions as well as English.

Using the Internet, the Smithsonian Institution hopes to be able to provide all Americans in their homes, libraries and schools with access to one of the world's most magnificent collection of manmade and natural treasures. This is the supermarket of supermarkets for global learners, and this is just the beginning.

The Smithsonian Institution is now paving the way for a global virtual museum.

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# THE GLOBAL SCHOOLHOUSE — THE NEXT GENERATION

The funding cycle for original Global Schoolhouse Project that was funded by National Science Foundation and other sponsors, has officially ended. However, the work of building the "Global Schoolhouse," that began over a decade ago with the Global SchoolNet Foundation(GSN), continues.

The concept for a "global schoolhouse" originated in 1985 when teachers in San Diego linked their students to classrooms on the east coast. With a grant from the National Science Foundation in 1992, GSN launched the "official" Global Schoolhouse Pilot Project that showcased live video-conferencing over the Internet.

Global SchoolNet Foundation is very interested in identifying schools, organizations, businesses, and individuals who want to become "partners" in expanding the concept of the Global Schoolhouse. This is an international effort to encourage "change agents" to work together to improve education and to support lifelong learning.

**GSN President Yvonne Andres With Students and Business Partner Global Schoolhouse (TM) URL: http://gsn.org/gsn/gsh.home.html**

## Global SchoolNet Pages

Global SchoolNet Foundation Page — URL:http://gsn.org/
Family Tree-Mail: Language Translation Pilot Project — URL: http://gsn.org/gsn/ftm.home.html
Scientist-on-Tap— URL: http://gsn.org/gsn/sot.home.html
LOGO Foundation — URL: http://gsn.org/gsn/logo.home.html
Presidential Awardees — URL:http://k12.cnidr.org/pa/pa.html

### TWO NEW LISTSERVS:

***globalschoolnet-watch@ gsn.org***

This list will send you periodic updates of collaborative projects, training materials, and special events focusing on using the Internet to make education more effective.

To send a message to:
*globalschoolnetwatch@gsn.org*

In the main body of the message write:
*subscribe globalschoolnet-watch@gsn.org FirstName LastName*

***cuseeme-schools@gsn.org***

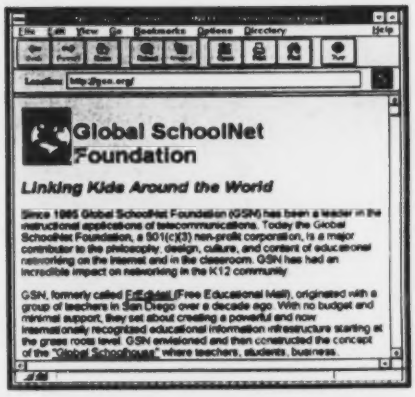
This list will put you in touch with other K12 schools AROUND THE WORLD who have the capability to do CU-SeeMe video conferencing over the Internet. The list will be used to announce upcoming special events and opportunities for schools to participate in live videoconferences with schools, scientists, authors, government, business, and community leaders.

To subscribe, send a message to:
*cuseeme-schools@gsn.org*

In the main body of the message write:
*subscribe cuseeme-schools@gsn.org FirstName LastName*

To learn more about the Global SchoolNet Foundation, the Global Schoolhouse(TM) Project, and other exciting projects, including Geogame, Family Tree-Mail: Language Translation, CyberStars: Number Ones of Tomorrow, and Where on the Globe is Roger? navigate to the GSH web site at :
URL: http://gsn.org

For further information contact:
Yvonne Marie Andres
Global Schoolhouse/Global SchoolNet Foundation
7040 Avenida Encinas 104-281,
Carlsbad, CA 92009
Tel: +1 (619) 433-3413




Global SchoolNet Foundation Home Page
URL:http://gsn.org/



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# EDULISTS

**BR_Cafe** is a place for kids to discuss what they're reading. BR_Cafe welcomes messages of two kinds: those requesting an individual with whom to discuss a book -OR- discussion of the book itself for the general forum discussion.

In order to participate in discussions, or simply to post a request for a bookreading e-pal, you must subscribe to the BR_Cafe list. When you provide your subscription request, it is sent to the list moderator who checks your e-mail address against those who have submitted reviews to the BR_Review list. If found, you will be manually added to the list of BR_Cafe subscribers. If not found, you will be asked to provide a book review for the BR_Review list. In other words, you provide a book review as your "ticket" into the book conversations in BR_Cafe.

For more information about BR_Cafe and how to use it, send a message to listproc@micronet wcu.edu

In the main body of the message write: **info br_cafe**

To subscribe to BR_Cafe, send a message to:
**listproc@micronet.wcu.edu**

In the main BODY of the message write:
**SUBSCRIBE BR_Cafe yourfirstname yourlastname**

Owner: Patti Johnson <johnson@micronet.wcu.edu>
Western Carolina University MicroNet

**T-AMLIT** is an electronic forum for teachers and scholars interested in American literature. The discussions concern different ways to teach literature.

To subscribe send a message to:
**listserv@bitnic.educom.edu**

In the main body of the message write:
**subscribe T-AMLIT firstname lastname**

**ISED-L**, the Independent School Educators List, is an unmoderated discussion group serving as a forum for the distinctive needs and interests of the independent school community around the world. ISED-L is a vehicle for faculty, staff, and administrators to share ideas, to seek advice, to establish new friendships, to locate collaborators for online and offline projects, and to post conference and other announcements. New subscribers are welcome. To join the group, send a message to:

**ISED-L-REQUEST@adler.mec.mass.edu**

In the body of the message, type:
**SUBSCRiBE ISED-L YourFirstName YourLastName**

Managers of the list are:
Marti Weston < mweston@umd5.umd.edu>
Ellen Berne <eberne@a1.mec.mass.edu>

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**EDEQUITY** (Educational Equity Discussion List) is an international theory and practice discussion list on issues of educational equity in a multicultural context in schools, colleges and other education sites. Educational equity is designed to encourage discussion between teachers and other educators, equity practitioners, advocates, parents, policymakers, counselors and others interested in equity. EDEQUITY serves as a forum to discuss how to attain equity for males and females; and how gender equity can be a helpful construct for improving education for all. The participation of both women and men is welcomed.

To subscribe, send a message to:
**MAJORDOMO@CONFER.EDC.ORG**

In the main body of the message write:

**subscribe edequity**

## THE SCHOOLWEB EXPLORATION PROJECT LIST

SWEP-L. is an informal forum for people interested in getting K-12 schools involved in world wide web (WWW) publishing. Schools interested in developing a WWW site can use SchoolWeb to track down companies, universities, and other institutions who have their own WWW sites and are willing to share space on them.

SWEP-L discussions will normally focus one two major subjects:

- Becoming a SchoolWeb school or sponsor
- The development of SchoolWeb sites

The discussion on SWEP-L is unmoderated, so members are expected to police themselves and remain on-task. General discussion of WWW in education will continue on WWWEDU.

To join SWEP-L, send an email message to:

**listserv@sjuvm.stjohns.edu**

In the main body of the message write:

**subscribe swep-l firstname lastname**

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# NEW LISTS

**WIN95-L** is an open, unmoderated give-and-take forum relating to Microsoft's Windows 95 operating system. Archives of WIN95-L mail items are kept in weekly files. You may obtain a list of files in the archives by sending a message to:

**LISTSERV@WIN95.DC.LSOFT.COM**

in the main BODY of the message write:

**INDEX WIN95-L**

To subscribe, send a message to:

**LISTSERV@WIN95.DC.LSOFT.COM**

In the main body of the message write:

**SUB WIN95-L yourfirstname yourlastname**

For more information contact:
Listowners: Nathan Brindle <nathan@lsoft.com> or
Scott Ross <rosss@primenet.com>

**WINNT-L** is an open, unmoderated give-and-take forum relating to Microsoft's Windows NT operating system. The list will cover both the Workstation and Advanced Server versions. Archives of WINNT-L mail items are kept in weekly files. You may obtain a list of files in the archives by sending a message to:

**LISTSERV@PEACH.EASE.LSOFT.COM .**

In the main BODY of the message write:

**INDEX WINNT-L**

To subscribe, send a message to:

**LISTSERV@PEACH.EASE.LSOFT.COM**

In the main body of the message write:

**SUB WINNT-L yourfirstname yourlastname**

Owner: Nathan Brindle <nathan@lsoft.com>
<nathan@ubvm.cc.buffalo.edu>

## PENGUIN AND MURA — LISTServs FOR INTERNATIONALISTS

After the Kobe Earthquake, the Pengin Mura Internet Club gathered students' and schools' email addressed in Japan and beyond, distributed them, and facilitated international communication amongst youth in a time of distress. PMIC defined its mission during that time: Use the Internet as a tool for building global understanding and goodwill among young people.

Two mailing lists have been created to further this mission. Both lists are to support crosscultural learning, networking, and understanding.

The first, or "**PENGUIN**" list, is to facilitate discussion among students, in whatever countries. A "50th anniversary" project is in the works.

The second, or "**MURA**" list, is for those who've lived, gone to school, taught, or worked overseas. How can this experience build international understanding? The "MURA" list is a space for answering that question. It is to be used for personal, educational, business, professional, cultural, etc.networking.

Both lists are open and unmoderated.

To subscribe to either list, send a message to: <MAJORDOMO@hHAMPSTEAD.K12.NH.US>.

In the message body, write <SUBSCRIBE (PMIC-PENGUIN or PMIC-MURA) (your internet identifier)>.

For questions, write <PMIC@AOL.COM>.

SPECIAL THANKS Randy Zeitvogel, who volunteered to set up the lists. He's with SERESC (Southeastern Regional Education Service Center) and the Hampstead School District in New Hampshire. Reach him at <rkz@hampstead.k12.nh.us>.

## MEDIAWEB — Film/Video Web Sites Discussion

MediaWeb is a loose coalition of film/TV/video webmasters that seeks to foster collaboration and to minimize the redundancy of materials on film/TV/video WWW sites. MediaWeb is open to all, but it is not really intended for the users of these sites. Rather, it aims to assist film/TV/video webmasters so that they might better coordinate their efforts.

To subscribe, send an email message to: **LISTSERV@VM.TEMPLE.EDU**
In the main body of the message write: **SUB MEDIAWEB yourfirstname yourlastname**

Archives of MEDIAWEB mail items are kept in monthly files. A list of files in the archives can be obtained by sending the command: INDEX MEDIAWEB to <listserv@vm.temple.edu>

Owner: Cal Pryluck <PRYLUCK@VM.TEMPLE.EDU>



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NetTeach News

# The Book Stall

## THE EDUCATOR'S CORNER

♪♪♪♪$☺**Class Action, How to Create Accountability, Innovation, and Excellence in American Schools** by John Katzman and Steven Hodas (New York, Villard Books, 1995) US $22.50

This is the book on school reform worth reading, and what's more it is written to be read. Excellent writing and profound thoughts. Check this one out.

♪♪♪♪$☺ **Internet for Kids** by Deneen Frazier with Dr. Barbara Kurshan and Dr. Sara Armstrong (Alameda, CA, SYBEX, 1995)

This is a wonderful book for all educators and parents of kids especially in the k-8 range. Superbly written and packed filled with great projects and interesting places on the Internet .Not a comprehensive guide but a book that helps you understand how the Internet can be used to create exciting learning experiences.

♪♪♪♪$☺ **World Link: An Internet Guidefor Educators, Parents, and Students** by Linda Joseph (Columbus, Ohio, Greyden Press, 1995) US $24.95

Linda Joseph, the editor of the World Link newsletter, has put together an excellent guide to the Internet for educators and parents and students. This is very easy reading and an excellent step-by-step guide.

♪♪♪♪☺ US Congress, Office of Technology Assessment, **Teachers and Technology: Making the Connection**, OTA-EHR-616 (Washington, DC: U.S. Government Printing Office, April 1995) US $19

Dr. Kathleen Fulton and her staff have put together an excellent comprehensive study on the issues surrounding how teachers use technology. This is definitely a study that every educator, educational leader, and parent should read

♪♪♪♪☺**Telecommunications and Education, Surfing and the Art of Change** by Gloria G. Frazier and Deneen Frazier (National School Boards Association, An ITTE Technology Leadership Network Special Report, 1994)

This is an excellent, concise guide to the networks for education leaders. It answers the most common questions and offers good insight into how net working can play a role in educational reform.

## THE INTERNET NOOK

♪♪♪$$ **Silicon Snake Oil, Second Thoughts on the Information Highway** by Clifford Stoll (New York, Doubleday, 1995) US $ 22

Clifford makes some excellent points here and his second thoughts are worth reading (although you might wait for the paperback) but I would guess Clifford's next book might be even more interesting. He needs time to enjoy his new found "freedom" from the excesses of his electronic networking and ponder how we can all better control the technology and use it as it should be used as a tool and not as a crutch or an escape.

♪♪♪$$**Teach Yourself Web Publishing with HTML In A Week** by Laura Lemay (Indianopolis, Indiana, SAMS Publishing, 1995) US $25

A good comprehensive guide to publishing web pages. Well organized and well written.

♪♪$$**How To Publish On The Internet—A Comprehensive Step-by-Step Guide To Creative Expression on the World Wide Web** by Andrew Fry and David Paul (New York, Warner Books, Inc., 1995) US $17.99

Easy reading, good concise guide to the web-weaving process. Contains SPRY Mosaic PC Software disk.

## COMING SOON

### THE INTERNET PUBLISHING KIT

In an effort to help users realize the full potential of the Internet,Ventana Media is releasing the Internet Publishing Kit. Packed with information, examples, tips, software, tools, and templates, it provides everything needed to create great looking, effective documents online. This Kit enables virtually everyone to participate on the Internet with their own creative documents, newsletters, advertisements, press releases, brochures, and catalogs.

Publishing on the Internet, a 400 page text included in the Kit, will guide readers with step-by-step instructions on creating a Home Page, building graphics video and sound into their documents, creating hyperlinks, structuring information for the Web, and a great deal more. Sample images and home pages feature links to sources of graphics, images, sounds, and video files. Netscape Navigator, the hottest new Web browser will be included, as well as, an HTML editor and Acrobat Reader.

The Internet Publishing Kit, featuring Ventana's innovative, new WebWalker technology offers extensive listings and linked resources on the Internet. WebWalker allows users to browse the contents of a CD-ROM and then access the most current information on the Internet, simply by selecting a live link from the CD-ROM's text.

The Kit is also accompanied by an Online Companion. This continually maintained site on Ventana Online□s server provides access to free utilities and links to current resources on the Internet.

Ventana Communications Group is a diversified publisher of computer information tools. Its divisions include Ventana Press, Ventana Media and Ventana Online.



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# THE GLOBAL KIOSQUE

## JUNE 1995

9-10 June **GopherCON'95** Radisson Hotel MetroDome, Minneapolis, MN. Features for this year's GopherCON will include: GopherCon '95 information can be found in inside the directory "Information about Gopher" on gopher.tc.umn.edu port 70. If you have a URL-savvy client you can use this URL: <URL:GOPHER://boombox.micro.umn.edu/11/gopher/Gopher_Conference_95>; You may register directly via email to <gopher95@boombox.micro.umn.edu>

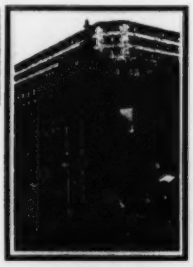
10 June **TECHNOLOGY IN CONTEXT: Empowering Children in the Contruction of Knowledge,** Bank Street College, New York City. Roundtable discussions on Technology As a Tool, and Evaluating Multimedia's Role in Education sponsored by the Bank Street College of Education. For information contact: Geoffrey M. Glick, Conference Director,Bank Street College of Education, 610 West 112th Street, NY, NY 10025, tel: +1- 212/875-4718, fax: + 1 212/875-4761,e-mail: gmg@BNK1.BNKST.EDU

17-19 June **Emerging Technologies— Lifelong Learning, NECC'95.** Baltimore, Maryland. For information contact: NECC'95 , ISTE, 1787 Agate Street, Eugene, OR 97403-1923. Tel: +1 503-346-3537, fax +1 503-346-3509e-mail : PDKATZ@ oregon.uoregon.edu.

20-22 June Canadian Networking Conference, **Networking '95** Carleton University, Ottawa. For more information contact: Dave Sutherland, Director, Computing and Communications, Carleton University, Ottawa, Ontario, K1S 5B6, tel: +1 613 788-2600 x3701, fax: +1 613 788-4448, email: Dave_Sutherland@carleton.ca

27-29 June. **The first Women in Technology Conference,** sponsored by the International Network of Women in Technology, will be held at the Santa Clara Convention Center, Santa Clara, CA. . Further information on the conference is available by calling +1 (818) 990-1987, via e-mail from witi@crl.com, or by writing WIT Conference, 4641 Burnet Ave., Sherman Oaks, CA 91403.

26 June **ISOC School Networking Colloquium at INET'95** Sheraton Waikiki Hotel, Honolulu, Hawaii, USA. Networking for schools is one of the crucial aspects of the emerging Global Information Infrastructure. This year, INET will host a unique 1-day preconference School Networking Colloquium for to address this issue from an international perspective and consider ideas for future ISOC activities to support and accelerate school networking around the world. The ISOC School Networking Colloquium will be a highly-interactive program. It will be based on brief presentations to stimulate thinking, followed by discussion and question & answer sessions with expert panelists and all colloquium participants. Plenary and breakout sessions will address the role of networking in schools, Internet technology for schools,educational applications of the Internet, and supporting educators' use of the Internet. The colloquium agenda will allow ampleopportunity for conversation and discussion inside and outside the sessions. Breakout panel/discussion sessions will address: Internet Networking Technology for Schools, Integrating Internet Services and Resources into the Curriculum, Internet Training for Educators, Internet Server and Service Technology for Schools, Internet-based Educational Applications Development, Supporting Educators on the Internet. To register navigate to: the WWW INET95 ISOC School Networking Colloquium form at http://www.isoc.org/ISOC_School_Networking.html
For information contact:
Email to <inet-registration@isoc.org> or
FAX to: +1-703-648-9887 or



NetTeach News

By postal mail to
Internet Society
12020 Sunrise Vly Dr, Suite 270
Reston VA 22091
USA

28-30 June. **INET'95 - Internet Society's 1995 International Networking Conference** in Honolulu, Hawaii. INET'95, the 5th Annual Conference of the Internet Society will focus on The Internet: Towards Global Information Infrastructure. It will be held 27-30 June 1995 at the Sheraton Waikiki Hotel in Honolulu, Hawaii. This year there will be a whole track devoted to EDUCATION (K-12 developments). For more information: URLs:
http://www.isoc.org/inet/inet95.html
Mail: inet95@isoc.org (information only)
Mail: inet-registration@isoc.org
Tel: +1-703-648-988, +1 800-468-9507 (in USA and Canada only), Fax: +1 703-648-9887; Post: Internet Society Secretariat, 12020 Sunrise Valley Drive, Suite 270, Reston, VA 22091 USA

## JULY 1995

8-13 July **I*EARN's Second Annual International Teachers Meeting** in Melbourne, Australia. The conference will bring together I*EARN teachers and students but will also be open to educators from outside the I*EARN Network. Discussions and demonstrations of the latest developments in educational practice utilising telecommunications and associated technology will be the key focus of the workshop sessions. Requests for further information or conference registration can be forwarded to the I*EARN GLOBAL SECRETARIAT at iearn@igc.apc.org, or
The I*EARN AUSTRALIA CENTRE
William A. J. Coppinger
Centre Co-ordinator: Australia
Chairperson: Executive Board of Directors
Australian National Office
P.O. Box 268 Broadford 3658
Victoria, Australia
Tel. (61)-57-843452 (24 hr voicemail)
Fax. (61)-57-841921
Internet: bcoppinger@peg.apc.org

23-30 July **Geometry, the Internet and the Coalition of Essential Schools.** Swarthmore College, Swarthmore, PA. This institute is being co-sponsored by the Geometry Forum, a National Science Foundation funded program at Swarthmore College in PA, and the Coalition of Essential Schools. Participants will become familiar with the resources currently available to math and science teachers through the Internet, as well as develop materials and projects for their own classrooms and students. Participating teachers will receive geometry software and support for linking school computers to the network.
Institute Contact person: Steve Weimar
Organization: The Geometry Forum
Address: Swarthmore College
City: Swarthmore
State & Zip: PA, 19081-1397



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NETNOTES

## THE GNN EDUCATION CENTER OPENS

Houghton Mifflin, McDougal Littel and O'Reilly Publishers are collaborating together on the new GNN Education Center.

In the Center, you can find Houghton Mifflin curriculum supplements in the Reading/Language Arts Center. and articles such as *Issues in Literacy Development* by John J. Pikulski and J. David Cooper.

The current features include: *A View of K12 Education on the Web* an article by Andy Carvin, author of the Ed-Web Project and Moderator of the WWWEdu listserv , *The Web, a Partner, and a Vision*, an Interview with Susan Hixson, a K-6 Reading Specialist at Carminati Elementary School in Tempe, Arizona conducted by Michael Shelton; and *No Girls Allowed*, an article by Melissa Koch on gender and technology use.

There are departments that will provide information in a variety of areas such as online projects, CLASSifieds (teachers looking to collaborate online) and links to some other K12 internet resources (somewhat limited and not as comprehensive as the EINET Galaxy or CEARCH Meta-Indices).

**GNN EDUCATION PAGE**
**http://gnn.com/gnn/meta/edu/index.html**

## GNN OFFERS SERVER SPACE AND ASSISTANCE TO STUDENT WEAVERS

The GNN Education Center will provide a Web site for a primary or secondary school with a strong commitment to creating an electronic magazine devoted to student writing. To demonstrate this commitment, the creators of the electronic magazine must submit an informal proposal to Melissa Koch, GNN Editor of the Education Center. The school will be expected to involve other schools around the country; within the proposal, the school should indicate how it will obtain submissions from other schools. In addition, the school in this collaboration must provide its own computer equipment and access to the Web, and make a commitment to learning the technical conventions of publishing on the Web, including HTML coding.

Houghton Mifflin, GNN, and McDougal Littell will share Web server space, some technical knowledge, and their experience with electronic publishing. The creators of the Education Center also expect to learn from the students' experiences in this new form of publishing. At the end of a year, the parties to this collaboration will discuss possible ways to extend the project.

Please send any questions or submit proposals to Melissa Koch at melissa@ora.com if your school wants to participate in this collaborative effort. The Education Center, located on GNN, will launch on May 1.

Melissa Koch
GNN Editor, Education Center
O'Reilly & Associates
2550 9th St.,Suite 111
Berkeley, CA 94710
(510) 883-7220
(415) 487-0855 (home office)

NETTEACH NEWS is the chosen newsletter for pioneer networking educators worldwide. It provides a forum for the exchange of information about how advanced networking technologies are changing society, and in particular the way we teach,learn, and deal with one another. It is intended as a platform for many varied personal and collective travels to new "networlds" for educators around the globe and a pathway to emerging global living learning villages.

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Site licenses are available for the Electronic version. Multiple discounts are available for 10 or more orders of the printed version for educational institutions.

Unsolicited submissions are accepted.

Submissions and subscription queries to:
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FOR RIE

Connecting Learners Around The Globe

# NetTeach News

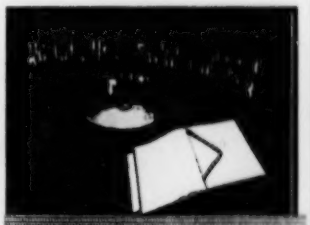
JUNE/JULY 1995 VOLUME THREE, NUMBER TWO

Opening Procession at UN50 Charter Ceremony- http://www.un.org/UN50/SanFran/0626-

## Turning Swords and Plowshares into Webs, Moos, and Chats

***"One World" is in some respects an ideal and an aspiration, born of modern interpretations of ancient moral insights and of rational estimates of the requirements for human survival; it is in other respects a pressing reality, an actual condition of mankind, produced by a century of change that has tied all the peoples of the earth together in an unprecedented intimacy of contact, interdependence of welfare, and mutuality of vulnerability."***

*Introduction, Swords Into Plowshare, The Problems and Progress of International Organizations* by Inis L. Claude, Jr. Random House, New York, 1956.



1945 SF Conference- UN Charter http://www.un.org/UN50/Photos/un50-020.gif

### *Swords Into Plowshares— The UN*

Fifty years ago, on June 26, 1945, the United Nations was formally established with the signing of the UN Charter at the United Nations Conference on International Organizations in San Francisco, California. The fundamental purposes of the UN as set forth in Chapter I of the UN Charter are:

- *To maintain international peace and security, and to that end: to take effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace, and to bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace;*
- *To develop friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples, and to take other appropriate measures to strengthen universal peace;*
- *To achieve international cooperation in solving international problems of an economic, social, cultural, or humanitarian character, and in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion; and*
- *To be a center for harmonizing the actions of nations in the attainment of these common goals.*

Perhaps the fundamental flaw in the UN Charter that has inhibited its ability to achieve its full potential was contained in Article 2.

*Nothing contained in the present Charter shall authorize the United Nations to intervene in matters which are essentially within the domestic jurisdiction of any state or shall require Members to submit such matters to settlement under the present Charter.*

With this the United Nations acknowledged the sovereignty of the nation state and declared itself an "international organization" as distinguished from a "world government". The preservation of national sovereignty has continued to dominate, dictate and delimit the actions and activities of the United Nations and its specialized activities. The ultimate hope was to convince and cajole nation states to establish national policies that would effectively promote plowshares over swords, and although there has been some major triumphs, the UN system remains a prisoner of nation states rather than a liberator of the people that inhabit this world, and has invested most of its resources in "swords for peace" rather than in "plowshares"..

### *The Changing Global Scene*

Fifty years ago, the word "digital" was not in the popular lexicon, and there was no Internet or concept of a global information infrastructure except perhaps in the minds of

(Continued on page 3)

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NetTeach News

A Word from the Editor

# To Build A Wall, or To Build Values—That Is the Question.

There is much discussions these days on educational listservs and in US Congressional hearing rooms about how to protect innocent learners from pornography on the web and the evil that lurks on the networks. The technical wizards are rapidly responding to the storm clouds over the internet by creating "caching" technologies and offering services that will effectively "censor" and "sanitize" the information on the web.

A couple of weeks ago, I sat on a panel with a wise and wonderful educator from the Hawaiian Department of Education. When the inevitable question came up about pornography on the web and how to protect the innocent students, she turned to me and suggested the solution is in providing a good education that encourages youth to distinguish right from wrong.

It is now fashionable for the President of the United States to discuss prayers in schools as it was fashionable during the last election for President Bush to discuss students pledging allegiance to the flag. However, what seems unfashionable these days is for public schools or employees of public schools to offer any independent value judgment or take a moral position. This is the age of politically-correct and in this politically-correct world it is safer to avoid independent thought and value judgments.

Some may suggest that the public schools systems in the United States do indeed continue to morally educate America's youth by waging campaigns against drugs, AIDS, and teenager violence but sadly most of these campaigns send negative messages. "Say NO" to drugs, to sex, to gangs rather than "Say YES" to creativity, individual and team achievement, volunteerism, love and marriage, and to that inner voice that says there is more to life than money, fame and power. This is education by fear and coercion and not education by love and example.

Many teachers and parents are legitimately worried about the apparent wild, wild, west atmosphere of the Internet as portrayed in the mass media. As a parent, I too would be very upset if indeed what I read in the newspapers or heard voiced by Congressmen was in fact true, but the current dangers on the net are far less than reported and even further less than the dangers that students face every day in the corridors of their schools, the hallways of the local suburban malls, and unfortunately even in the confines of their home.

There is some pornography on the world wide web but far less than people are being led too believe. And yes there are some evil adults online but many more adults who would corrupt and convert young who are not online. It is far more difficult for those would-be online corruptors-of- youth to target youth than it would be for the off-line would-be-corruptors. The rather invisible nature of networks makes it more difficult to identify minors, and it is far easier for pedophiles and the like to stalk neighborhoods or attend youthful gatherings than to seek vulnerable youths on the Internet.

The real issue, however, is not protection of minors but social responsibility for educating our youth. If we are seriously concerned about the corruption of our youth, then we must accept the most onerous burden of all—we must ourselves set moral examples. As a society we must distinguish right from wrong and fully commit ourselves to positive thought and action. To fight pornography, we should be investing more money and not less in support of good literature, good drama, and the fine arts. To fight perversion and extremism, we should invest in building culture, our environment, and our national and international heritage.

Ironically, the fundamental principals on which the Internet was formed are morally sound. Those who created and promote this technology are for the most part people who are deeply committed to democracy, volunteerism, and a professional code of honor that is based on cooperation and collaboration rather than corruption and competition.

Perhaps the Internet is changing as the demographics of the user communities change but the real challenge is not to insulate youth from the culture of the Internet but rather to lead them to a genuine understanding and acceptance of its fundamental founding philosophy. We need to send the more mature youth across the globe the unequivocal message that we trust them and believe that they are fundamentally good citizens of the world capable of making sound judgements and performing good deeds. Our younger students require not censorship but rather our unequivocal support and willingness to provide them with the kind and quality of teaching and learning content that they need to become independent thinkers and moral citizens of the world.

**Editor: Kathy Rutkowski**
**Contributing Editor: Stephanie Stevenson**

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## Swords Into Webs (Continued from page 1)

some visionary scientists and science fiction writers. The nation state was alive and well, or so it seemed to the vast number of politicians that assembled in San Francisco that June day to ratify the UN Charter.

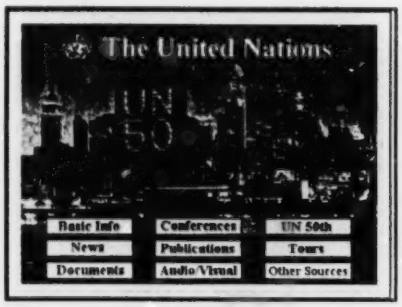
The primary concern was the threat of another world war. Those who signed the UN Charter did not fear international narcotic trade, international terrorism, and the other global issues such as environmental pollution and new virulent bacteria strains that can be easily transported via modern transportation to to densely-populated areas—issues that now preoccupy the minds of many world leaders. The world was pretty much viewed as black and white—the good nations endorsed the UN Charter and agreed to live by its guiding principles and the bad nations were those nations that were not members and who only towed the line when coerced by the collective good.

### *The Impotence and Irrelevance of the Nation State*

We live in a world where the power and purpose of the nation state is challenged by the reality of global interdependencies. There are truly no longer any national "safe zones". The Oklahoma bombing, continuing ethnic purging in Bosnia, and the fears of a global ebola outbreak underscore our new vulnerabilities and suggest the need for a new level and kind of international cooperation and global collaboration. It is unlikely in our lifetime that nation states will fade away but increasingly the localities and new global alliances brought together in part via networks will enjoy a greater voice in significant policy decisions.

### *Global Networks And A New World Order*

Global networks can assist world leaders and world citizens in the evolution of a new world order, and national and international governments are turning to the electronic data highways to reach new constituents as well as to allay the concerns of old ones. The Electronic Town Hall meetings that the Clinton Administration has introduced demonstrates how this medium can be used to build and redistribute political power, and the proliferation of UN and UN-related agency web pages demonstrates how this medium




**UN HOME PAGE**
**http://www.un.org/**

can effectively distribute time-sensitive news and critical materials to a larger international audience.

Potentially, these empowered communities can work together to install a new world order that foremost seeks to protect and preserve global resources and to protect and defend the sovereign rights of all citizens of the globe.

### *A Global Learning System*

Many visionary educational networkers talk about the emergence of a "global schoolhouse," "global communities of learning," and a "global system of learning." Educational programs such as the Copen Family-sponsored I*EARN Project are focused on creating communities of learners and cultivating a new generation of global citizens who can delight in their unique cultural differences while creating collaborative learning experiences.

The success of these network-based educational programs perhaps suggest the time has come for adult leaders to find positive ways to work together in a very proactive manner rather than to expend energy and resources in reacting to negative events.

### *From Nations to People From Politics to Policy*

On the global networks all people are considered equal. School children can send messages to the President of the United States, the Prince of Wales, Bill Gates, and to Captain Piccard. In one sense, this means absolutely nothing because those in power can do whatever they please. However, the potential now exists for those schoolchildren to be heard and to influence those in power, and also for the people to emerge as their own true watchdogs.

### *Building A System of Collaboration*

Global networks offer an opportunity for people of diverse backgrounds and cultures to come together and find the common ground and collective will required to build a world order based on cooperation and collaboration. Global networks demonstrate that finding common ground does not mean losing one's individual or cultural identity and indeed networks can help define individuality and preserve cultural traditions.

Fifty years ago, some brave statesman dared to talk about "collective security" but only a few seriously talked about global society. Today, more people are talking about global society and global communities. The time perhaps has come to re-prioritize our international political system, and give less emphasis to building collective security, fighting wars for peace, and more attention to building a new global society, protecting the interests of new global citizens, learners and researchers, and working towards a new world order where individual sovereignty takes precedence over national sovereignty.

The challenge is not converting swords to plowshares but in using webs, chats, and other new and old forms of communication to redefine peace as more than the interval between wars, and war as more than the cessation of hostilities. The fundamental challenge is to bring together diverse groups and distant communities and empower them to build new social systems that better address the pressing issues of our day.



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THE VIRTUAL MUSEUM

# The Science Learning Network

The Science Learning Network (SLN) was established by the Franklin Institute as a unique collaborative of museums, industry and schools to support the teaching and learning of science, mathematics and technology in grades kindergarten through eighth (K-8). The SLN is funded by the National Science Foundation and Unisys Corporation.

SLN provides an Internet-based resource for science educators and a virtual museum for science students to explore and learn within.

## *Participating Museums*

Six science centers are currently participating in the SLN including:

The Franklin Institute Science Museum (Philadelphia, PA)

The Exploratorium (San Francisco, CA)

The Miami Museum of Science (Miami, FL)

The Museum of Science (Boston, MA)

The Oregon Museum of Science and Industry (Portland, OR)

The Science Museum of Minnesota (St. Paul, MN)

Each science center is developing its own unique resources based on its own unique area of expertise.

## *Partnerships With Schools*

Each of the science centers is partnered with a school in its community and this partnership allows the schools to gain a presence on the Internet as well as to work with the museums in the development of appropriate content for various grade levels.

The current museum/school partnerships include:

The Franklin Institute Science Museum with the Levering Science Magnet School;

The Exploratorium with the Ross School,

The Miami Museum of Science with the Avocado Elementary School;

The Museum of Science with the Hosmer School;

The Oregon Museum of Science and Technology with The Buckman School;

The Science Museum of Minnesota with the Museum Magnet School.

## *Virtual Exhibits*

The participating science centers are creating virtual exhibits to be used by teachers and students. These exhibits cover a range of subjects and encourage inquiry and interactivity. Some of the current exhibits and those under development include:

### The Exploratorium:

*Diving Into the Gene Pool* (8 April to 4 September 1995);
*The Cow's Eye Dissection* found in the Learning Studio
*Mutant Fruit Flies, Vocal Vowels, Bronx Cheer Bulb, Bird In A Cage, Shimmer, Fading Dot, and Mona*

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found at the Learning Studio's Online Exhibit Area.

### The Franklin Museum

Virtual Exhibits:
*Benjamin Franklin: Glimpses of the Man;*
*The Heart: A Virtual Exploration*

### The Science Museum of Minnesota:

*Maya Adventure—activities and information related to ancient and modern Maya Culture*

### The Oregon Museum of Science and Industry

Check out OMSI's Educational Programs

### The Miami Museum of Science

*pH* —an on-line chemistry exhibit for K-5 teachers who want to incorporate inquiry-based science and the internet into their curriculum
*Web Hunt*—an exhibit that will allow elementary school teachers to teach a lesson on marine biology

### The Museum of Science

The Dance of Chance Exhibit opens September 1, 1995 and will be centered around four hands-on experiments which develop patterns in real-time for the visitor. Stayed tuned for other upcoming exhibits including:

a virtual visit to the world's largest Van de Graaff generator and the Museum of Science's Theater of Electricity, a virtual visit to a tropical rainforest, and a virtual scanning electron microscope.

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New Online Resources

# A Tour of the SLN Virtual Science Centers

**❶The Science Learning Network**
**http://sln.fi.edu/tfi/sln/sln.html**

**❷The Franklin Institute Science Museum**
**— URL: http://sln.fi.edu/**
**Levering Science Magnet School**
**http://sln.fi.edu/school/levering.html**

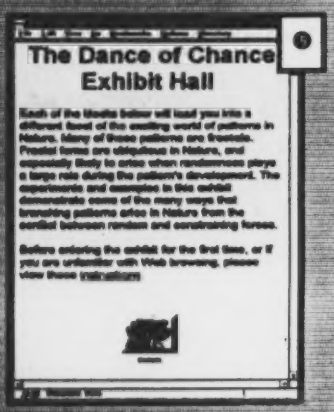
**❸The Exploratorium**
**http://www.exploratorium.edu/**
**The Ross School**
**http://www.exploratorium.edu/learning_studio/Ross/rosspage.html**

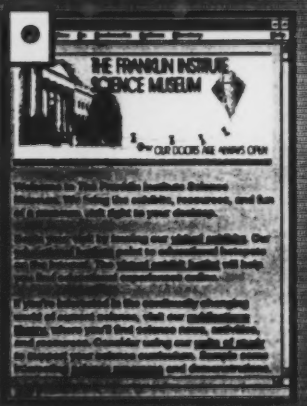
**❹The Miami Museum of Science**
**http://199.227.86.200/**
**Avocado Elementary**
**http://199.227.86.200/avocado/avocado.html**

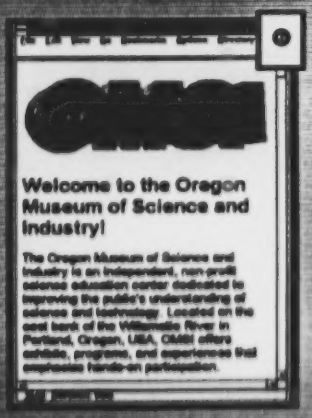
**❺The Museum of Science in Boston**
**http://www.mos.org/**
**Hosmer School**
**http://www.mos.org/mos/hosmer/hosmer.html (curremtly not available)**

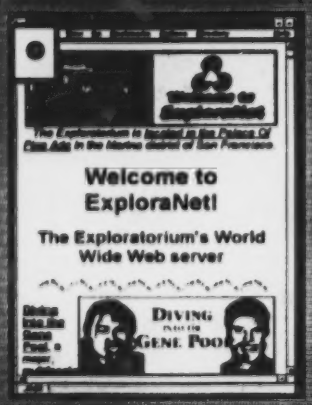
**❻The Oregon Museum of Science**
**http://www.omsi.edu/**
**The Buckman School**
**http://buckman.pps.k12.or.us/buckman.html**

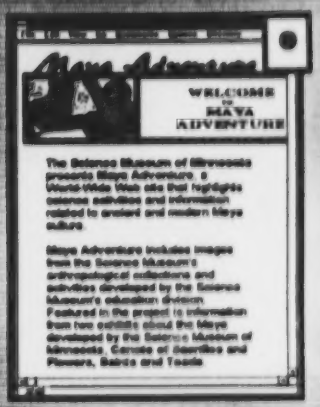
**❼The Science Museum of Minnesota**
**http://www.ties.k12.mn.us:80/~smm/**
**Museum Magnet School**
**http://ties.k12.mn.us/~smm/mmshome.html**



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NETBYTES

## INTERNET BOOT CAMP

In April, User's Choice, a rapidly growing educational video producer, released their latest video entitled, the INTERNET BOOT CAMP . This video is designed to assist beginners in learning "how to" connect to the Internet, install software, set-ip modems, and use the powerful tools of the Internet in an easy and friendly manner. The video presentation consists of friendly conversational instruction with good graphics and demonstrations.

The video is approximately two hours in length and the full-text of the video, along with an extensive list of providers and references, as well as all the software needed to connect to and access the Internet is contained on two accompanying disks.

The INTERNET BOOT CAMP retails for $29 95 (plus shipping and handling) and comes with a 30-day money back guarantee from User's Choice.

For more information or to order call +1 800-889-2578 or + 1 610-566-2993 or send mail to
User's Choice
P O Box 58
Glen Mills, PA 19342-0058
send e-mail to
usechoic@omni voicenet com
or navigate to
http //www voicenet com/DVbiz/uchoice

(See NTN Review in the CyberWall)

## PBS Creates the Internet Publishing Group

PBS recently launched the Internet Publishing Group which will be responsible for developing quality content resources for Internet distribution. The Internet Publishing Group will expand PBS' world wide web site and provide PBS member stations with assistance in developing their own webs and online content resources.

Cindy Johanson was named to be the managing editor of online services and will oversee the development and expansion of PBS World Wide Web site. Cindy was formerly the manager of educational technology for PBS's K-12 Learning Services Department.

Molly Breeden was named the manager of online marketing and business developments. Molly was formerly the manager of marketing services for PBS Online.

For further information, please call Molly Breeden at tel: +1 703-739-

## The Online Internet Institute

The Online Internet Institute (OII) is a collaborative project between Internet using educators, content area experts and teachers desiring professional growth.

This summer OII is conducting training for more than 400 participants, providing them hands-on experiences and advice on how to integrate the the Internet within their classrooms and support their peers to do the same.

For more information about this exciting and ambitious project, contact Ferdi Serim, OII Principal Investigator at fserim@prism prs.k12.nj.us or check out the OII home page at: http://www prism prs.k12.nj.us:70/0/OII/OIIhome.html1

## Global SchoolNet Foundation Sponsors Online Contest for Schools

The Global SchoolNet Foundation kicked off an Online Contest for schools to win free software and prizes with its first drawing on July 1, 1995. Schools can qualify to win free software and other prizes by registering at the GSN world wide web site and answering a "question of the week." Each week there will be a new set of questions and a new drawing for prizes. the GSN WWW address is: **http://gsn.org**

The Global SchoolNet Foundation was selected as a finalist for the first annual National Information Infrastructure (NII) Awards. GSN was chosen among more than 500 entries. A total of 36 finalists were named in six categories: arts and entertainment, business ,community,education, government and health.

For more information about the Global Schoolnet Foundation, contact Yvonne Andres tel: +1 619-433-3413, e-mail andresyv@cerf net

For more information about the NII Awards, contact Robin Smith tel: +1 310-450-7941 x 23, e-mail rsmith@accessmedia.com



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# International Organizations On-Line

## *Main Agencies On-Line*

The UN, many of its specialized agencies such as UNESCO, the ITU, and the IAEA and many of the other major international organizations such as the World Bank and the International Federation of the Red Cross and Red Crescent Societies are online. Some have set up gopher sites and others have set up web sites and many have a combination of gopher, web, and ftp sites.

## *THE VIRTUAL UN*

The UN itself has several pages on the web. It's main page is available at

**http://www.un.org/**

This page is the main index link to UN electronic pages that provide information on current affairs, UN documents, conferences, UN publications, UN campus tours, as well as external links to other UN Internet Sites and to Depository Libraries.

## IO Collections

The UN main page links to the World-Wide Web Virtual Library of the United Nations Information Services. This is site is not an official UN index but is maintained by staff of The United Nation International Drug Control Program (UNDCP) located in Vienna, Austria. It contains information links to most of the major UN agencies as well as to many other international organizations.

Other useful collections include

- The World Wide Web Virtual Library—International Affairs and Research Resources (IANWeb) found at

**http://www.pitt.edu/~ian/ianres.html**

*(Continued on Next Page)*

## A Partial Listing of Major IOs ON THE WWW

**The International Atomic Energy Agency (IAEA),**
**Web: http://www.iaea.or.at/**
**Gopher: gopher://gopher.iaea.or.at:70/1**

**The International Telecommunication Union (ITU),**
**Web: http://info.itu.ch/**
**Gopher: gopher://info.itu.ch:70/1**

**The United Nations Development Program (UNDP)**
**Web Site: http://www.undp.org/**
**Gopher Site: gopher://gopher.undp.org/**

**The UN Educational Scientific and Cultural Organisation (UNESCO)**
**http://firewall.unesco.org/**

**The United Nations gopher://gopher.undp.org:70/11/ungophers/unep**

**International Federation of the Red Cross and Red Crescent Societies**
**http://ww.ifrc.org**

**The World Health Organization (WHO)**
**Web: http://www.who.ch/**
**Gopher: gopher://gopher.who.ch/**

**The UN Environment Program (UNEDP)**
**gopher://gopher.undp.org:70/11/ungophers/unep**

**World Trade Organization (WTO) http://www.unicc.org/wto/**

**GATT General Agreement on Tariffs and Trade**
**gopher://cyfer.esusda.gov/11/ace/hot.topic.links/gatt**

**Food and Agriculture Organization (FAO)**
**Web: http://www.fao.org/**
**Gopher: gopher://gopher.fao.org:70/1**

**United Nation's Childrens Fund (UNICEF)**
**Web: http://www.unicef.org/**
**Gopher: gopher://hqfaus01.unicef.org:70/1**

**United Nations High Commissioner For Refugess**
**Gopher: gopher://gopher.iaea.or.at:70/1**

**United Nations Conference on Trade and Development (UNCTAD)**
**Web: http://gatekeeper.unicc.org/unctad/**
**Gopher: gopher://gopher.undp.org/1/ungophers/unctad**

**World Bank :**
**Web: http://www.worldbank.org/**
**Gopher: gopher://ftp.worldbank.org:70/1**

**World Meteorlogical Organization (WMO) http://www.wmo.ch/**



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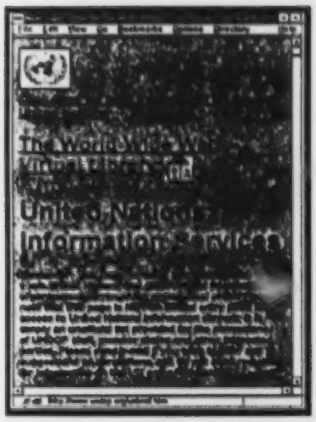
COOL WEBS

# Building New Collaborations and New Systems



**UN Information Services Index**
**http://www.unicc.org/**

- UN International Computing Center (UNICC) Home Page located at:
  **http://www.unicc.org/**
- Yahoo's International Organizations:UN Index found at:
  **http://www.yahoo.com/Government/International_Organizations/United_Nations/**
- Linkages — A Clearinghouse for information on past and upcoming international meetings related to the environment and development, Provided by the International Institute for Sustainable Development (IISD)—located at:
  **http://www.iisd.ca/linkages/**

### *The New IOs on the Web*

Other new and smaller international organizations and groups having an international interest and focus such as universities, non-profit agencies, and unique global movements are also developing cyberspatial presences.

*(Continued on next page)*

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## Check Out These IO Cool Sites

**IAEA's World Atom— http://www.iaea.or.at/worldatom/**

**United National International Computing Center (UNICC)**
**Gopher: gopher://gopher.iaea.or.at:70/1**
**Web: http://www.unicc.org/**

**WWW Virtual Library—United Nations Information Services**
**http://www.undcp.org/unlinks.html**

**Ebola Virus Outbreak Page**
**http://www.who.ch/ebola/ebolahome.html**

**Our Global Neighborhood**
**http://www.fsk.ethz.ch/D-REOK/fsk/cgg/cgg_home.**

**One World Online**
**http://www.bbcnc.org.uk/online/oneworld/top.html**

**International Agency for Research on Cancer— http://www.iarc.fr/**

**UN International Drug Control Program — http://www.unicc.org/**

**The World Intellectual Property Organization (WIPO)**
**http://www.uspto.gov/wipo.html**

**International Trade Law Project**
**http://ananse.irv.uit.no/trade_law/nav/trade.html**

**International Institute for Applied Systems Analysis (IIASA)**
**http://www.iiasa.ac.at/Welcome.html**

**UN Scholars' Workstation at Yale University**
**http://www.library.yale.edu/un/unhome.htm**

**IANWEB Resources —International Affairs Resources**
**http://www.pitt.edu/~ian/ianres.html**

**The Graduate Institute of International Studies—EXPLORER**
**http://heiwww.unige.ch/explorer/**

**World Wide Classroom — http://www.worldwide.edu/**

**Multilaterals Project —**
**http://www.tufts.edu/departments/fletcher/multilaterals.html**

**OLIN — Online Intelligence Project**
**http://www.icg.org/intelweb/index.html**

**Voices of Youth — http://www.iisd.ca/linkages/un/youth.html**

**The Electronic Embassy — http://www.embassy.org/**

**The Embassy Page- http://www.globescope.com/web/gsis/embpage.html**

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# IO USES OF THE INTERNET

These organizations are involved in a whole range of international activities involving the environment, education, science, human rights, hunger, the weather, and Outer Space.

## *Uses of the Net*

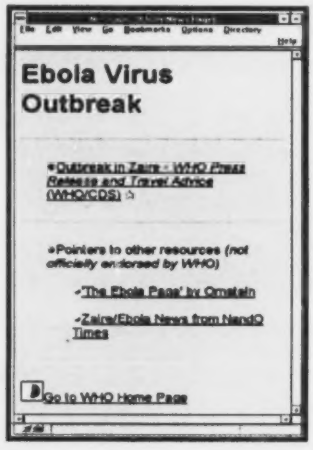
The UN, its specialized agencies and other international organizations are rapidly building a significant on-line presence. This activity reflects their growing recognition that the Internet can:used for:

- **Information dissemination**
- **Internal communications and operations,**
- **Public relations**
- **Facilitation of research**
- **Development of new partnerships and new global collaborations**
- **Facilitation of Teaching and Learning**

## *The Dissemination of Information*

The UN and other international agencies and organizations with an on-line presence recognize the power of the Internet to help disseminate the valuable information that own. Much of this information is already available to the public but in fact the number of libraries that archive this information and subscribe to the UN publications are limited. Moreover, the Internet supports the rapid dissemination of critical information of a time-sensitive nature not found in print materials. By using the Internet, the international organizations are able to reach the communities that can best use this information such as corporate and governmental decision-makers from around the world, and researchers, students and teachers, and lifelong learners.

## *Conducting Business*


Ebola Virus Outbreak
•Outbreak in Zaire - WHO Press Release and Travel Advice (WHO/CDS)
•Pointers to other resources (not officially endorsed by WHO)
•'The Ebola Page' by Ornstein
•Zaire/Ebola News from NandO Times
Go to WHO Home Page

**Ebola Virus Outbreak Page**
**http://www.who.ch/ebola/ebolahome.html**

Internally, many of the International Organizations are using the Internet to conduct their work and bring field intelligence and research knowledge more rapidly to those who need to make quick and informed decisions.

The World Health Organization, for example, is able to use the Internet to quickly gather information from its field research stations around the world, and in times of health crises, such as the recent Ebola Outbreak in Zaire, WHO can more effectively communicate critical policy decisions to national governments, health facilities and personnel worldwide, other organizations that might be involved in the implementation of directives, and to the general public.

## *Public Relations*

International Organizations are also using web sites to garner greater public support of their mission activities. In some cases this may very well mean more resources and a higher priority in the IO system. This is especially important to organizations that have focused on social, economic, cultural, and educational areas since these areas generally have not received the funding priority and public recognition comparable to the UN Security Council and organizations involved in matters of conflict resolution.

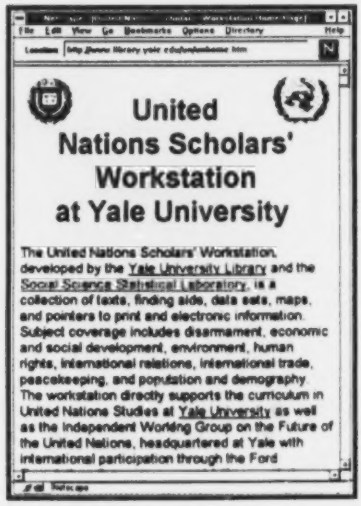
By using the Internet, these organizations can inform a greater number of people about upcoming conferences, meetings, activities, publications, key personnel changes, and can potentially attract new funders and participants.

## *Facilitating Research*

The Internet has facilitated the needs and interest of global researchers since its inception by providing a global meeting space. disseminating current news and original work-in-progress, and by allowing researchers to access new global resources including people, libraries, and facilitates. Only recently have researchers of international issues, environment science, health sciences and biology, human rights, and other subjects of a socio-economic nature such as trade and development have begun to harness the power of the Internet.

Virtual centers of international study such as the Yale University UN Scholars' Workstation (shown below) and foreign area research centers are now appearing and

*(Continued on next page)*


United Nations Scholars' Workstation at Yale University
The United Nations Scholars' Workstation, developed by the Yale University Library and the Social Science Statistical Laboratory, is a collection of texts, finding aids, data sets, maps, and pointers to print and electronic information. Subject coverage includes disarmament, economic and social development, environment, human rights, international relations, international trade, peacekeeping, and population and demography. The workstation directly supports the curriculum in United Nations Studies at Yale University as well as the independent Working Group on the Future of the United Nations, headquartered at Yale with international participation through the Ford

**UN Scholars' Workstation**
**at Yale University**
**http://www.library.yale.edu/un/unhome.htm**



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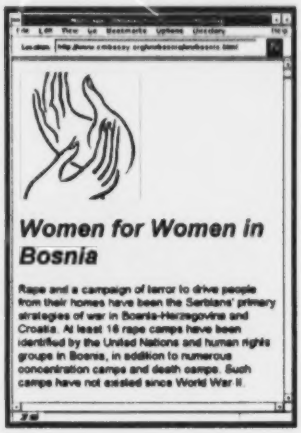

Women for Women in Bosnia
Rape and a campaign of terror to drive people from their homes have been the Serbians' primary strategies of war in Bosnia-Herzegovina and Croatia. At least 16 rape camps have been identified by the United Nations and human rights groups in Bosnia, in addition to numerous concentration camps and death camps. Such camps have not existed since World War II.

**Women for Women in Bosnia**
**http://www.embassy.org/wwbosnia/wwbosnia.html**

are supporting new collaborations research into areas of major global importance.

### *New Dialogue and New Collaborations*

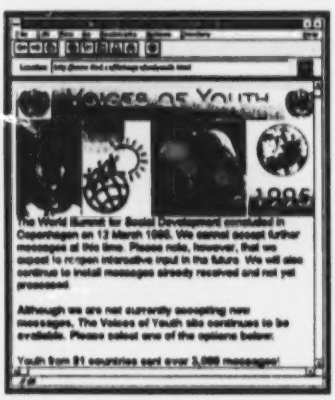
The Internet offers the opportunity for groups of people sharing similar visions to collaborate together and in some cases create new global associations much more easily than was the case before the creation of networks. Smaller international organizations with limited resources can use the Internet to reach new segments of the global community and potentially new funders, new partners, and new participants and workers. Major international organizations can involve greater numbers of active participants in their international dialogues, conferences, and research programs.

An example of new collaborations via the Internet is the Dialogues of Peace Exhibit. This is an international exhibition of the works of some sixty artists representing as many countries of the world. The Association Francaise d'Action Artistique -AFAA—organized the exhibit. The original artwork is on display at the Palais de Nations, the United Nations Headquarters in Geneva, Switzerland. However, digital images and information about the artists is available on the web site.

### *Teaching and Learning*

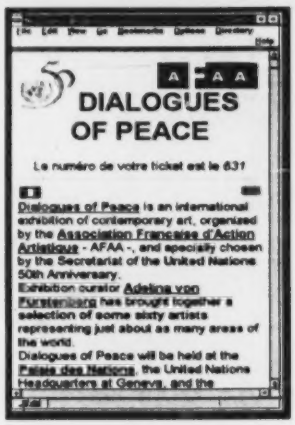
International organizations and programs are increasingly developing content with teachers and learners in mind, especially the pre-University or K12 community. Mostly this involves creating collaborative learning projects and opportunities such as UNICEF's Voices of Youth. In that project, youth from around the world were invited to send messages to their national representatives attending the World Summit for Social Development in Copenhagen on 12 March 1995. In just six weeks, over 3000 messages were sent by youth from over 81 countries. Their messages dealt with their feelings and recommendations regarding a variety of topics such as:

- The Environment
- Human Rights
- Population
- Poverty , Job Opportunities and Conflict




**VOICES OF YOUTH**
**http://www.iisd.ca/linkages/un/youth.html**

## NEW COLLABORATIONS


DIALOGUES OF PEACE
Le numéro de votre ticket est le 631
Dialogues of Peace is an international exhibition of contemporary art, organized by the Association Francaise d'Action Artistique - AFAA -, and specially chosen by the Secretariat of the United Nations 50th Anniversary.
Exhibition curator Adelina von Fürstenberg has brought together a selection of some sixty artists representing just about as many areas of the world.
Dialogues of Peace will be held at the Palais des Nations, the United Nations Headquarters at Geneva, and the

**Dialogues of Peace**
**http://un50-afaa.itu.ch/**

Students and teachers via the Internet have access to UN, international issues and foreign affairs information that is not typically available in school libraries or classrooms. Middle and high school students can use comprehensive statistical data bases and important historical archives to do conduct their independent research into a variety of subjects such as global pollution, international trade, and major man-made and natural disasters.

New on-line global education projects and programs promote learner collaborations and the cultivation of a new generation of global citizens. Programs such as I*EARN, the European School Project, APICNET, The Globe Project, The Chatback Trust and the Global SchoolNet Foundation are encouraging learners to think about the globe, its limited resources, the major political and economic challenges faced by decision-makers around the world and to work together with other learners, teachers, and adult mentors to develop responses to potential and existing problems. These programs are helping to create better information, more worldly, more international, and more proactive youth.



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# NTN CYBERWALL

## CYBER-U

### An HTML Crash Course for Educators

Andy Carvin, moderator of WWWEDU wrote a tutorial on HTML for educators for the SchoolWeb Exploration Project. Mark Gillingham of Michigan State put it in HTML and put it into his web server that can be found at:

http://www.educ.msu.edu/admin/guide.html

A newer version can be found at:

http://k12.cnidr.org:90/htmlguide.html

## THE WWW Pub CORNER

WebSite for Windows NT 3.5 is now available from O'Reilly and Associates. The system requirements are: 386 or higher, 5 MB RAM (10 MB recommended), 20 MB disk space, VGA video display adapter, NT 3.5 with TCP/IP connectivity, or Windows95 Beta with TCP/IP Connectivity, 3.5" disk drive.

WEbSite was created for individuals, small business, schools and other groups that desire to publish on the World Wide Web. The list price is US 499.

It was designed with the non-UNIX fluent in mind.

A Windows 95 version will be available after Windows 95 is released.

For more information, call + 1 800-998-9938, +1 707-829-0515 or send a fax to +1 707-829-

## THE VIDEO HUT

☆☆☆☆ **The Internet Boot Camp—A Video Guide for the Raw Recruit. ©1995 User's Choice Inc. US $29.96 (Running Time 105 Minutes)**

This is one of the best video's I've seen produced on the how tos of using the Internet. The descriptions are easy, the presentations excellent and the degree of information accuracy is superior. The producers of this video have their acts together and provide two accompanying discs that include a very extensive help index as well as the basic internet software needed to get started. I recommend this tape to anyone looking for basic and accurate information and for simple and precise instruction on how to connect to the Internet and how to use the various tools. FIRST RATE.

Available from:

User's Choice
P.O. Box 58
Glen Mills, PA 19342-0058
send e-mail to:
usechoic@omni.voicenet.com

## THE BOOK NOOK

*Going to School on the Internet produced by* © Cisco Systems (Australia) *1995* with assistance from Michele Huston, Global Schoolhouse Australia Project Coordinator.

This is good guide for any Australian netteachers interested in learning some basic terms and uses of the Internet in schools. CISCO Systems (Australia) has also set up a help line for schools in Australia to provide advice on the use of Internet resources within schools. The Hotline number is +1 800 678 808. Copies of the booklet are available and can

## *THE INET STORE*

INET, The Annual Meeting of the Internet Society was held June 27-20th in Honolu, Hawaii. The Proceedings from INET'95 are available electronically and in print form. The Proceedings are now available in extensive hypermedia form at inet.nttam.com. The print copy can be obtained from the ISOC Secretariat located at:

Internet Society
12020 Sunrise Valley Drive, Suite 270
Reston, VA 22091 USA
isoc@isco.org

Volume 1 contains the 8 sessions of INET's first full Education Track (Track D) and includes papers from innovative networking educators from around the world.



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NetTeach News

# TECHNOTES

## MCI and NSF Announce New

MCI and the National Science Foundation launched the very high speed Backbone Network Service (vBNS), the first nationwide high-speed network to used advanced information age technologies that support the rapid transmission of massive amounts of voice, data and video.

Intitially the new vBNS will serve as an experimental platform for developing new national networking applications and will link five supercomputing sites around the U.S.

The vBNS will use the capabilities of MCI's nationwide network of advanced switching and fiber optic transmission technologies, known as Asynchronous Transfer Mode (ATM) and Synchronous Optical Network (SONET). The vBNS initially will operate at speeds of 155 Mnps (million bits of data per second) and is planned to operate at greater than 600 Mbps by 1996.

## The HotJAVA Browser Available

Sun Microsystems recently released the HOTJAVA Browser, the world's first dynamic Web browser. HotJava builds on traditional Internet browsing techniques and expands them by adding a dynamic capability to pages. With HotJava, animations, audio and video, 3-D behavior can be embedded in Web pages.

Conventional Web browsers download static pages—limited to text, images, and low-quality audio. The pages can only be viewed and interactivity is limited to fetching another static page. The HotJava browser allows downloaded pages to contain small software programs, which run locally on the user's computer. This supports a whole new level of interactivity.

The HotJava browser is written in the Java language, a new object-oriented programming language developed at Sun Microsystems. The Java language resembles C++, but is much simpler and easier to use. Programmers can create interactive HotJava Web pages that contain small Java applications called "applets".

The HotJava release is free of charge for non-commercial use, available for downloading from http://java.sun.com/

## ECCO Pro 3.0 Released

On June 20, 1995 NetManage, the leader in TCP/IP applications for Windows, released ECCO Pro 3.0 , the industry's first global work and information integration software for business professionals and workgroups. Version 3.0 debuts with over 100 new features, including workgroup collaboration, Internet integration, an Internet Address Book with over 2,000 hot sites, and AutoAssign, an automatic information organizer.

ECCO Pro 3.0's easy-to-read interface resembles familiar, everyday information management tools. Numerous enhancements include powerful new Notepads for outlining all the details of every project, a Rolodex card interface for Contact Management, and a familiar desktop look for the Calendar. In addition, ECCO Pro 3.0 adds customize colors, tabs to switch between views, revised menus and dialogs, icon balloon help, a print coach for sophisticated print layouts, as well as helpful hints.

The software package includes an Internet Address Book preconfigured with over 2,000 Gopher, World-Wide Web, and FTP sites organized in over 30 categories including business, computers, government, science, and Art.

ECCO 3.o's AutoAssign simplifies information management by automatically categorizing information into specific ECCO folders, based on a wide range of user-definable rules. When informationis entered, ECCO checks the "rules", and if the conditions are met, the information is placed in the appropriate folders. When combined with Shooter, AutoAssign greatly simplifies the management of the information sent from the Internet or any other Windows program. Users can "shoot" information into ECCO from a Web Page, and then AutoAssign will automatically categorize it for them.

ECCON delivers an easy-to-use, world-wide, collaborative solution that integrates both personal and workgroup information. Projects, brainstorming, appoitnments,s chedules, and contact information can easily be managed, shared, and synchronized globally.



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# NEW LISTS

## STWNet — School-to-Work

A discussion list on School-to-work issues.

To subscribe, send e-mail to:

**majordomo@confer.edc.org**

In the main body of the message write:

**subscribe STWNET**

## MUSEUM-L

A discussion list on museums. To subscribe, send e-mail to:

**listserv@unmvma.unm.edu**

In the main body of the message write:

**subscribe MUSEUM-L firstname lastname**

Postings should be addressed to:

**MUSEUM-L@unmvma.unm.edu**

## TUTOR-L and TUTOR-ANNOUNCE-L

Tutor-L is an unmoderated public conference for discussions and notices relating to the development and introduction of: (a) the new "global tutoring" concept, (b) the IT (International Tutoring) Project and (c) other alternative forms of learning.

To Subscribe to TUTOR-L, send e-mail to:

**listserv@edie.cprost.sfu.ca**

In the BODY of the message write:

**SUB TUTOR-L yourfirstname yourlastname**

Tutor-Announce-L is a moderated public conference for voting on referendum issues relating to global tutoring, the IT Project and other alternative forms of learning.

To Subscribe to TUTOR-ANNOUNCE-L, send e-mail to:

**listserv@edie.cprost.sfu.ca**

In the main body of the message write:

**SUB TUTOR-ANNOUNCE-L yourfirstname yourlastname**

For technical questions relating to these Lists, contact the owner (Michael Berns tutor-admin@edie.cprost.sfu.ca ).

## INET-GURU

INET-GURU is an open, unmoderated discussion list featuring the rights and welfare of programmers and other information specialists who have contributed to internet technologies. Things such as how to protect copyrights, how to recognize significant inet software innovations and other contributions such as information digest, public access to inet, publication of free information conducive to further advances and proporagtion of the internet.

To subscribe, send e-mail to:

**kimsoft@bronze.coil.com**

In the main body of the message write:

**SUB INET-GURU yourfirstname yourlastname**

## BESTWEB

BESTWEB is a mailing list to discuss the best web sites all over the world.

To subscribe, send a n e-mail message to:

**LISTSERV@TREARNPC.ege.edu.tr**

In the main body of the message write the command:

**subscribe BESTWEB fistname lastname**

Listowner: Veli HAZAR veli@TREARNPC.ege.edu.tr

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NetTeach News

NetProject

# LIVE FROM THE STRATOSHPE

In October 1995, students in schools and science museums all across America can travel aboard NASA's Kuiper Airborne Observatory (KAO) as it flies at 41,000 feet to study planets, stars and galaxies with its infrared telescope. For the first-time ever, NASA's Advanced Communications Technology Satellite will provide live video direct from the KAO, and 2-way audio and Internet connections to schools and science museums during daytime and overnight missions. LIVE FROM THE STRATOSPHERE (LFS) is the second in the PASSPORT TO KNOWLEDGE series of electronic field trips, which began with LIVE FROM ANTARCTICA in 1994-95: it's an integrated multimedia project involving:

- live television (over PBS and NASA-TV), and also available on videotape;
- print materials suggesting hands-on, in-class activities, and
- online computer networks using the Internet

Targeted primarily at the middle school grades, LFS will also provide interdisciplinary materials that can be easily adapted for elementary and high school use.

## *HOW TO JOIN*

There are three major components.

### *The Video Component*

The project will begin in late September with a half-hour videotaped introduction to infrared astronomy, the Kuiper Airborne Observatory and demonstrations for teachers of hands-on in-class activities featured in the Teacher's Guide. Next will come a one-hour LIVE briefing on the upcoming Observing Flights from the KAO's hangar at NASA's Ames Research Center in California: students meet the astronomers, crew, and the teacher and student team who will travel aboard the KAO during the live observing flights.

These introductions will be followed by a 2 1/2 hour LIVE flight during the school day, and a 5-hour night-time flight, observing planets, stars and galaxies. Interactive video uplinks from NASA Ames, and selected science museums and schools across the nation, connect students to astronomers on board the KAO and to each other. Some science museums and planetariums have already agreed to hold overnight camp-ins in conjunction with the night flight.

In late October will come a videotaped digest of all the previous programming, providing an "evergreen" compilation of the astronomy seen during these unique KAO missions, with rights to re-use the video in class in years to come.

### *Print Materials*

A 50-page Teacher's Guide is being developed by PASSPORT TO KNOWLEDGE featuring hands-on activities written by Carolyn Sumners, Ph.D., Director of Astronomy and Physics at the Houston Museum of Natural Science, and reviewed by the Materials Development Team of the PASSPORT TO KNOWLEDGE project, KAO staff and observers and teacher- alumni of NASA's FOSTER project (Flight Opportunities for Science Teacher En-Richment.)

### *Online Resources*

NASA'S K-12 Internet Initiative will provide online materials accessible via a World Wide Web page; alternate Internet access will be be provided via Gopher and basic Email. NASA Spacelink and PBS ONLINE will provide additional online hosts. Just as in LIVE FROM ANTARCTICA, the online materials will include extensive archival Information, including the full text and graphics of the printed Teacher's Guide, and current data on the KAO, astronomy and aeronautics, as well as INTERACTIVE opportunities such as Field Journals written by researchers on the KAO, and the ability to send Questions directly to scientists and others seen on camera.

Additional online COLLABORATIVE opportunities will include having students at diverse sites around the nation develop group activities and real-time databases relating to astronomy, meteorology and aeronautics.

## *Registration Information*

To receive regularly updated information online, join the "**updates-lfs**"list: Send an e-mail message to:

**listmanager@quest.arc.nasa.gov**

In the message body, write: subscribe updates-lfs

To receive introductory materials and other background information, send an e-mail message to:

**info-lfs@quest.arc.nasa.gov**

Those without e-mail access should write to :

Life from Stratosphere
P.O. Box 1502
Summit, New Jersey 07902-1502

or call: 1-800-626-LIVE (1-800-626-5483)



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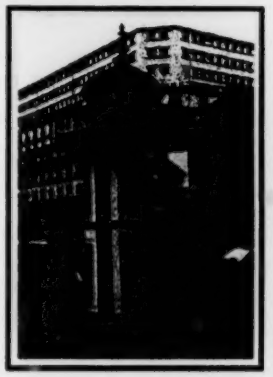
# THE GLOBAL KIOSK

## September 1995



**20-22 September EDNET 95** *The Educational Technology and Telecommunications Markets Conference. Loews Coronado Bay Resort, San Diego, CA. For more information, send mail to: EdNET 95, Nelson B. Heller & Associates, 1910 First Street, Suite 303, Highland Park, IL 60035-3146, call: +1 708-441-2920, or send e-mail to: EdNET95@aol.com*

**27-29 September Networld+Interop 95** *Georgia World Congress Center, Atlanta, GA. Over 500 leading suppliers and the networking industry's top experts will join together to demonstrate the latest in networking and telecommunications-gate on the world wide web to http://www.interop.com.*

## October 1995

**24-27 October VI International Conference on Technology and Distance Education.** *San Jose, Costa Rica. Sponsored by NOVA Southeastern University and Universidad Estatal a Distancia. Keynote Speakers: Dr. Roberto Dobles, Minister of Science and Technology, Costa Rica; Dr. Michael Moore, Director of the American Center of Distance Education, Penn State. For information send mail to: NSU, Fischler Center for the Advancement of Education, 3301 College Ave, Fort Lauderdale, FL, , telp: +1 305-476-8969, fax: +1 305-423-1224, or e-mail: pujolsj@alpha.acasr.nova.edu*

**25-27 October WWWDEV conference** *in Fredericton, NB. Should prove to be a worthwhile meeting for those interested in developing world wide web pages. For information contact:*
*Rik Hall, Program Director - Distance Education and Off-Campus Services, University of New Brunswick - Continuing Education Centre, Duffie Drive - PO Box 4400, Fredericton, NB E3B 5A3, Tel: +1 (506) 453-4854 Fax + 1(506) 453-3572 , E-mail to Hall@UNB.CA*

**25-27 October ALASKA Communications Technology Conference '95** *in Juneau, Alaska. The goals of this conference are to educate Alaskans about using available communications technology, to discuss future communications technology needs in Alaska, and to demonstrate business opportunities available to Alaskans using communications technology.*
*For more information contact: Kari Westlund,Juneau Convention and Visitors Bureau,369 South Franklin, Suite 201*
*Juneau, Alaska 99801,Tel: +1 (907)586-1737 , Fax: + 1 (907)586-1449 , e-mail to: ALASKAJNU@AOL.COM*

**25-27 October Ninth Annual Technology & Learning Conference**, Inforum in Atlanta, GA. *Sponsored by the National School Boards Association's Institute for the Transfer of Technology to Education. For more information send mail to:National School Boards Association, Institute for the Transfer of Technology to Education, 1680 Duke Street, Alexandria, VA 22314-9973 or call: +1 800 950-6722.*

**26-29 October. AAHE 6th National Conference on School/College Collaboration.** *Renaissance Washington D.C. Hotel .. For information call Carol Stoel or Grace Moy at 202/293-6440 ext. 34 or ext. 15 or e-mail: cstoel@capcon.net*

**30 October- 1 November ONLINE 95 and Multimedia Schools** *The Palmer House Hilton, Chicago, IL For more information contact: Tasha Heinrichs, 462 Danbury Road, Wilton, Ct 06897-2126, or call: +1 203-761-1466.*

## November 1995

**30 November-3 December Tel Ed'95** *Broward County Convention Center, Fort Lauderdale, Florida. Sponsored by ISTE. For more information contact: Cathy Hutchins, Tel: +1 904-824-2955, Fax: +1 904-829-5958. e-mail <hutchic@ mail.firn.edu>; Margaret Riel, Tel: +1 619-943-1314, Fax: +1 619-943-1314, and e-mail <mriel@weber.ucsd.edu>*

## December 1995

**2 December 1995 *First Annual Classroom Telecommunication Conference***, *Pasadena Conference Center. Sponsored by the Association for Classroom Technologies (ACT/ CUE).Keynote address by Al Rgoers, Executive Director, Global Schoolnet Foundation. For more information send mail to:: C.T.C. P.O. Box 5546, Pasadena, CA 91117, e-mail to: <dkresse@cello.gina.calstate.edu> and call: +1 818-792-8546.*

5-8 December **I C C E 95, International Conference on Computers in Education** *Raffles City Convention Centre Singapore Sponsored by Association for the Advancement of Computing in Education Asia-Pacific Chapter (AACE APC) ICCE 95 will focus on a broad spectrum of inter-disciplinary research topics concerned with theories, technologies and practices of applying computers in education. It aims to provide a forum for scientific interchange among educators, cognitive scientists, computer scientists, and practitioners throughout the world, and especially from the Asia-Pacific region.*
*For more information contact:*
*ICCE 95/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, E-mail: AACE@virginia.edu; tel: +1 804-973-3987; Fax: + 1804-978-7449 ICCE 95/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, E-mail: AACE@virginia.edu; tel: +1 804-973-3987; Fax: + 1804-978-7449.*



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## Asia Now Online

*Asia Now Online* brings Asia-Pacific resources in text, audio, video and graphics to Internet cybersurfers around the world. The Asia Now Online web site contains recently broadcast stories and links to other Asia-Pacific resources available via the Internet.

Asia Now Online conducts online curriculum projects for students and educators studying the Asia=Pacific region. The fall 1995 project will be "Pacific Islands" and will bring together students and educators from the Asia-Pacific region together with students from across the world.

"Asia Now" is a coproduction of KHET/Honolulu and KCTS/Seattle in cooperation with NHK/Tokyo.

Asia Now Online is a partnership of Hawai'i Public Television, the University of Hawaii and the Hawaii Department of Education.

Asia Now Online is looking for partnerships and funding support. For more information, contact:
Asia Now Online
Hawaii Public Television
2350 Dole Street
Honolulu, HI 96822
Tel: +1 808-955-7878
Fax: +1 808 949-7289
E-Mail: asiaol-l@uhunix.uhcc.hawaii.edu

**ASIA NOW ONLINE WEB PAGE**
**http://www2.hawaii.edu/hptv/**

## The Cornell CU-SeeMe Project

The Cornell CU-SeeMe Project produces Cu-SeeMe, the low cost, desktop videoconferencing software that supports real-time, multiparty conferencing on IP networks.

CU-SeeMe is available free for non-commercial use from Cornell University under copyright of Cornell and its collaborators. CU-SeeMe provides one-to-one communication, or by use of a reflector, a one-to-many or a many-to-many communication depending upon user needs and hardware. It displays 4-bit grayscale video windows at 160X12o pixals or double that diameter. It includes audio for the MAC and Windows and a slide projector option. Keyboard messaging is also available.

To obtain Cu-SeeMe software use an anonymous ftp and connect to host cu-seeme.cornell.edu in the directory /pub/video. Download the README file for the most current information on the latest MacIntosh and Windows versions.

There are two discussions lists regarding CU-SeeMe. One follows developments of Cu-SeeMe and allows contact with other users. To subscribe send email to: listserv@cornell.edu and in the main body of the message write: subscribe cu-seeme-l <your name>

The other list carries announcements of new versions. To subscribe send email to: listserv@cornell.edu and in the main body of the message write: subscribe cu-seeme-announce-l <your name>

NetTeach News is the chosen newsletter for pioneer networking educators worldwide. It provides a forum for the exchange of information about how advanced networking technologies are changing society, and in particular the way we teach,learn, and deal with one another. It is intended as a platform for many varied personal and collective travels to new "networlds" for educators around the globe and a pathway to emerging global living learning villages.

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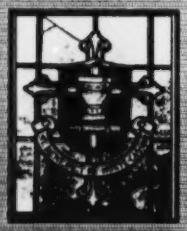
Connecting Learners Around The Globe

# NetTeach News

AUGUST 1995 VOLUME 3, NUMBER 3



The Order of St. Benedict
http://www.osb.org/osb/gen/bendct.html

***"Monasteries are not as otherworldly as you might imagine. If they appear secluded and removed from the mainstream of society's activity, it is only because they attempt to create a climate that fosters an authentic engagement with life at its most profound and human level, something often lost amid the noise and distraction of today's world. When we are quiet enough, freed from our inner noise and chatter, we can see with new respect the natural beauty and wisdom of the world around us and appreciate our ties to it. Such perceptive silence opens up our lives to healthy reverence and awe for all things; it creates a capacity for openness that is both humanizing and life-giving.***

*Introduction, The Monks of New Skete—The Art of Raising A Puppy* by The Monks of New Skete, Little, Brown and Company, Boston, 1991

## The Art of Raising An Independent Learner

For many children, the month of September marks the beginning of a new school calendar year and the beginning of their career as a school learner. Many parents view the start of school as their time to disengage, or retire from an active involvement in their child's learning process. Many teachers look with mixed feelings to another year trying to teach young people in communities that cannot or will not provide them with the kind and level of support they need to accomplish their mission.

It is important that parents, teachers and society as a whole reach a common ground and endorse a clear and unified purpose for formal education. What do we truly seek to accomplish when we send our youth to schools? What do we really expect from teachers and schools?

It is equally important that parents, teachers, and communities reach a common understanding of the relationship between school and home, and school and the greater community. What role should parents and communities play in the education process?

These questions grow more important as new technologies appear that many claim will help to significantly reform the formal education process.❶ Indeed, some suggest that these new technologies will result in the end of school as we now know it, or at least a modification that includes a greater home-schooling component.

### *America Goes Back to School*

Recently, Richard W. Riley, the US Secretary of Education, issued an invitation to parents, grandparents, community leaders, professionals, people skilled in vocational trades, religious leaders, and creative artists and all American citizens to become actively involved in the school learning process. The Secretary noted that studies indicate that family and community support for education results in students learning to higher standards and safer schools.❷

Secretary Riley urged everyone to participate in *The America Goes Back to School Campaign* which kicks off the week of September 11. The Family Involvement Partnership for Learning, a coalition of some 140 family, community, religious and education organizations dedicated to improving learning through the development of family-school-community partnerships is sponsoring the campaign.❸

*(Continued on page 3)*

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NetTeach News

## A NOTE FROM THE EDITOR

# The Gender Issue — Is There A Place in Cyberspace for Girls and Women?

Recently, I was asked the question, "Are there web sites on the World Wide Web *exclusively for girls*?" I thought of many web sites that would offer *both girls and boys* excellent opportunities to learn in an exciting and engaging manner. I also thought about sites that dealt with topics that were mostly relevant to girls such as menstruation or of interest to predominately girls such as baby-sitting. It occurred to me, however, that this question would involve much more serious research than has been done so far in regards to learning on the Internet and gender learning orientations. More importantly, parents and educators must consider the Internet in a broader context than just learning.

Earlier this month after a lengthy court battle, Shannon Faulkner became the first women admitted to The Citadel. I applaud Shannon Faulkner for her courage and determination and also the American Legal System for supporting her in gaining entry into The Citadel. However, I seriously doubt that The Citadel is worthy of Shannon Faulkner and will ever understand her brand of courage and determination.

Recently, General Charles Krulak, the new commandant of the United State Marine Corps, offered his opinion that women have no place in ground combat. He stated, "It just is damn tough being a grunt." Krulak expressed his belief that women have the courage and intelligence it takes for combat but apparently lack the necessary gruntness. I question General Krulak's methods of measuring adequate "gruntability"— throughout history women have endured great physical hardships and have fought to protect their children and families. However, I agree with General Krulak and wonder whether this Man's Marine Corps is really a place for American women to demonstrate their unique powers of leadership and moral courage.

In the last two decades, great strides were made in the name of "gender equity" and many glass ceilings were broken. Many American feminist now recognize that it is not enough for a woman to succeed in a man's world based on men's value systems. It is now acknowledged that in the future feminine values and perspectives must weigh more significantly into the transformation of the workplace and society. We are beginning to see that happen with the arrival of flex time, extended maternity leave, and other accommodations to the nurturing instinct.

This brings us back to the Internet and the question we need to ask, "Is there a place in Cyberspace for Girls and Women?" Currently the Internet is populated mostly by white professional males. However, one should not presume that this means that the Internet is a hostile place to females and girls. Yes, there are cyberporn web sites and Usenet newsgroups that insult all women and girls. . However, the basic culture of the Internet is one that reflects what has come to be identified with females and nurturers—cooperation, communication, collaboration and tolerance.

The Internet is now a place for girls, women and all those interested in learning, sharing knowledge, communicating to promote better understanding between cultures and people, and collaborating on projects that benefit mankind. There is a need to help girls and women recognize that the Internet is indeed a friendly place for them and a place where they can truly demonstrate their unique abilities in a way that does not compromise or conflict with some of their basic feminine instincts and values. Educators who encourage their students to use the Internet and its tools must be mindful that girls are interested in how the technology can help them reach out to other people and satisfy their need to nurture, collaborate, and use their intellect for the good of their family and society.

The Internet needs females to survive and to reach its potential as a place for all people who believe in the importance of collaboration, cooperation, and open and genuine communication to the survival of mankind. The challenge is not to make the Internet a women's place as much as to encourage women and men to work together to use the power of Internet to build a new world, a world that is truly equitable and one where there are no wars and no need for any one to have to be "a grunt."

Editor: Kathy Rutkowski
Contributing Editor: Stephanie Stevenson

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## Raising An Independent Learner (Continued from page 1)

### *Isolation*

Education is a societal responsibility. In earlier times, this responsibility was shared by many adults in the community and not just schoolteachers and parents. In the Industrial Age, schools became disengaged from the community and discouraged parents and few other adults except teachers to participate in the formal teaching process.

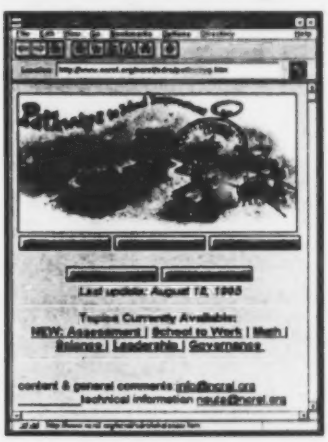
This kind of isolation deprived learners of a rich source of adult role-models and mentors and imposed tremendous pressures on teachers to become the reigning adult experts on a variety of subjects, subjects difficult for even specialists to keep up with.

Although great strides have been made in the last decades to encourage greater parental involvement, parents have not generally been welcome with open arms as active mentors in the formal learning process in the schools.

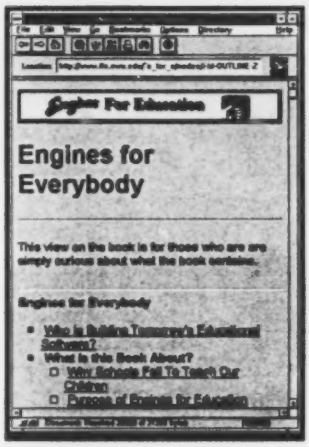
### *The Need for Independent Learners*

*As society shifts from an industrial age, in which a person could get by with basic reading and arithmetic skills, to an information age, which requires the ability to access, interpret, analyze, and use use information for making decisions, the skills and competencies needed to succeed in today's workplace are changing as well.*❶

In June 1991, the US Department of Labor released the report entitled,


Last update: August 16, 1995
Topics Currently Available:
NEW: Assessment | School to Work | Math | Science | Leadership | Governance

**Pathways to School Improvement**
***http://www.ncrel.org/ncrel/sdrs/pathwayg.htm***




**ENGINES FOR EDUCATION**
***http://www.ils.nwu.edu/~e_for_e/nodes/I-M-INTRO-ZOOMER-pg.html***

What Work Requires of Schools: A SCANS Report for America 2000.❹ This report identified five competencies:

- ***Resources:*** Identifies, organizes, plans, and allocates resources
- ***Interpersonal***: Works with others
- ***Information***: Acquires and evaluates information
- ***Systems***: Understands complex interrelationships
- ***Technology:*** Works with a variety of technologies.

The report also identified a three-part foundations of SCAN Skills and Personal Qualities:

- ***Basic Skills:*** Reads, writes, performs arithmetic and mathematical operations, listens and speaks
- ***Thinking Skills***: Thinks creatively, makes decisions, solves problems, visualizes, can learn, and reasons
- ***Personal Qualities***: Responsibility, self-esteem, sociability, self-management, integrity, and honesty

It is clear that the achievement of these competencies and the acquisition of these skills is a major undertaking that involves the active participation of parents, teachers, and the entire community.

### *Going Back*

The invitation for adults, particularly parents to Go Back to School and to get involved in learning is an excellent first step to ending isolation and creating new communities of learning. It is important that adults grasp the reality of today's school as opposed to the schools of their childhood. It is also important that adults can clearly see the limitations in which teachers must mentor and student must learn in today's transitional schools.

### *Open New Communications*

Educators, learners, parents and others from the community need to engage in an open and honest communication about the goals and purpose of education, the nature of teaching, and ways society assesses the effectiveness of the education process.

### *Partnerships for Learning*

The beginning of school provides parents, teachers and communities the opportunity to work together as a collaborative team to touch the future by nurturing confident, competent and content learners and citizens. It is a time for all to come together and not to divide or to disengage.

❶ *Engines for Education* by Roger Schank ©1994 The Institute for Learning Sciences. See Web Site: http://www.ils.nwu.edu/~e_for_e/nodes/I-M-INTRO-ZOOMER-pg.html

❷Community Update, No. 27, August 1995, US Department of Education, p.1. (See Also US Dept of Edu Web Site, Community Update Archives. Url:http://www.ed.gov/legislation/GOALS2000/community/95-08-sp.html

❸America Goes to School Guide. Available by writing to: GOALS 2000 Information Resource Center, US Dept of Education, Room 2421, 600 Independence Ave, SW, Washington, D.C. 20202

❹ PATHWAYS, Rethinking Assessment and Its Role in Supporting Education Reform. See Web Site: http://www.ncrel.org/ncrel/sdrs/areas/issues/methods/assment/as700.htm

❺What Work Requires of School: A SCANS Report for America 2000. US Department of Labor, June 1991, pp xvii-xviii. (See PATHWAYS, Web Site: http://www.ncrel.org/ncrel/sdrs/areas/issues/methods/assment/as7scans.htm



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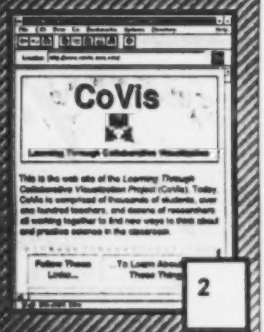
# A Tour of Weather Webs

1

**❶THE DAILY PLANET**
http://www.atmos.uiuc.edu/

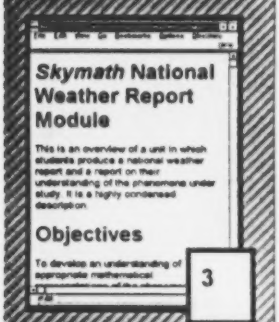
The Earth Science Testbed is called "The Daily Plant" or simply, TDP. It is operated by the University of Illinois Department of Atmospheric Sciences. Its purpose is to provide a wide range of earth science data, but specializes in current weather maps, satellite images, and animations.It also includes a set of online hypermedia instruction modules.



2

**❷COVIS — Geosciences Server**
http://www.covis.nwu.edu/geosciences-temp.html

This Web Site is under construction but there are already some great tools up there—in the COVIS tradition-to create exciting learning adventures. Check out Interschool Activities under Global Warming; the COVIS Weather Visualizer under Visualization tools and data sets, and the Mentor database.

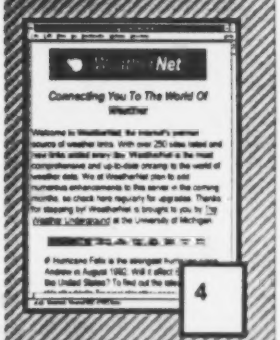


3

**❸SKYMAH National Weather Report Module**

http://atm.geo.nsf.gov/skymath/lesson1.html

This web site provides an overview of an instruction unit in which students produce a national weather report and a report on their understanding of various weather phenomena under study.



4

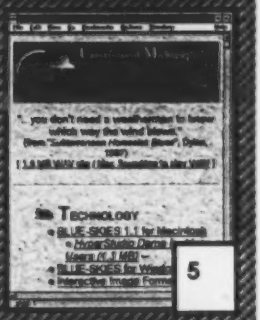
**❹WeatherNet**
http://cirrus.sprl.umich.edu/wxnet/

WeatherNet provides excellent connections to over 250 Internet sites having weather significance. The WeatherNet is a product of The Weather Underground (See the Feature Article on pages 7-8, and the next item)

**❺THE WEATHER UNDERGROUND**

http://groundhog.sprl.umich.edu/

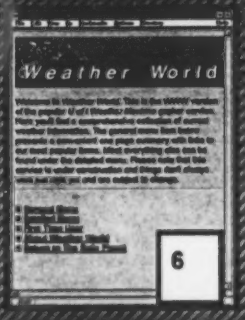
From here you can download Blue-Skies software, telnet to UM-WEATHER to access a textual, men-driven database of current weather and environmental information., join the K-12 weather listserv, access WeatherNet , obtain information on curriculum and training resources, and link to collaborative resources such as WxNET, the Eskimo North Weather Station, and the Colorado Weather Underground among other sites.



5

**❻WEATHER WORLD**
http://www.atmos.uiuc.edu/wxworld/html/top.html

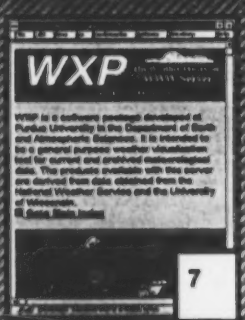
Weather World is the World Wide Web version of the University of Illinois Weather Machine gopher service. This provides access to satellite imagery, surface maps, upper air, forecast maps, regional information, and severe weather information.



6

**❼WXP — The Weather Processor**
http://thunder.atms.purdue.edu/

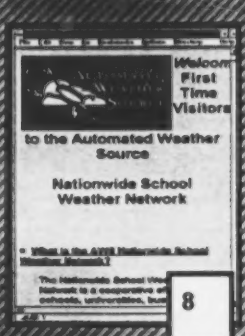
WXP is a software package developed at Purdue University's Department of Earth and Atmospheric Sciences. It is intended to be a general purpose weather visualization tool for current and archived meteorological data.



7

**❽The Automated Weather Source**
http://www.aws.com/infopage.html

The Nationwide School Weather Network is a cooperative effort of K-12 schools, universities, businesses, museums, and the broadcast media to bring real-world, real-time meteorological data into schools and local communities. Each participating school has an AWS fully automated weather station.



8

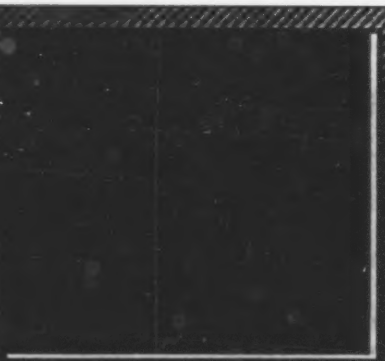
# TRACKING HURRICANE FELIX

**WEATHERNET:**
**TROPICAL WEATHER PRODUCTS —**
http://cirrus.sprl.umich.edu/wxnet/
http://cirrus.sprl.umich.edu/wxnet/tropical.html

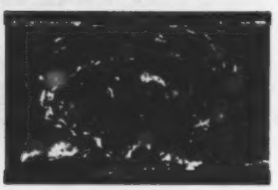
WEATHERNET's Tropical Weather Products provides access tot, hurricane advisories, hurricane graphics including tracking maps, radar and satellite imagery, and local weather reports from affected areas, reconnaissance reports, and general hurricane reporting.

**EXPLORES**
**1995 Hurricane Seasion**
http://www.met.fsu.edu/explores/tropical.html

This excellent site provides acess to information on current hurricane activity, the FEMA Hurricane fact sheet, Dr. Gray's 1995 Atlantic Hurricane Season forecast, information on tropical weather outlook, monthly tropical weather summaries, national meteorological center tropical desk, aircraft reconnaisance plan of the day, and satellite interpretation messages.



**Hurricane Felix**



**NATIONAL HURRICANE CENTER**
http://nhc-hp3.nhc.noaa.gov/index.html

The National Hurricane Center Web Site provides information on current hurricane activity. The information includes among other items public advisories, marine advisories, cyclone discussion, and cyclone possibilities.

There is also access to the National Hurricane Center Anonymous FTP Servver that is located at:

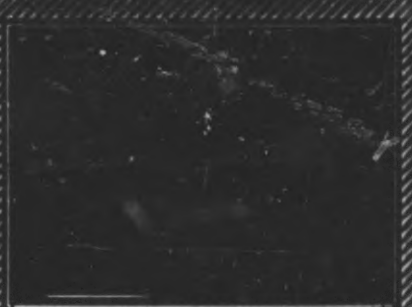
ftp.nhc.noaa.gov

**NATIONAL HURRICANE CENTER**

**TROPICAL PREDICTION CENTER**

**NATIONAL WEATHER SERVICE OFFICE**
**Tallahassee, Florida**
**http://thunder.met.fsu.edu/nws/public_html/**

This site provides access to current hurricanes, interactive marine observations—a graphical interface to reports from automated weather stations along the coasts and around the globe.





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# NEW LISTS

## EDEQUITY
## (Educational Equity Discussion List)

This discussion list considers issues of educational equity in a multicultural context in schools, colleges and other education sites. Educational equity is intended for teachers, equity practitioners, advocates, parents, policymakers, counselors and others interested in equity. The participation of both women and men is welcomed.

Some topics for discussion include, but are not limited to, classroom interactions, curriculum development, school environment, education reform, violence prevention, math and science education, vocational and nontraditional education, school-to-work issues, community-based learning, and counseling.

To subscribe, send a message to:

**MAJORDOMO@CONFER.EDC.ORG**

In the main body of the message write:

**subscribe edequity**

## K12ArtsEd Listserv

The John F. Kennedy Center for the Performing Arts, in partnership with the National Endowment for the Arts (with support from the U.S. Department of Education) has created ARTSEDGE, the national arts and education information network. For more information, access:
http://artsedge.kennedy-center.org

The purpose of this listserv is to encourage discussion about using the arts in all aspects of K-12 education. The list is intended for artists, arts educators and teachers of other subjects.

Barbara Benisch, Arts Education Liaison from the Southern Arts Federation,will moderate the listserv.

To join, send e-mail to:

**listserv@kennedy-center.org**

In the body of the message write:

**subscribe k12artsed <your name>**

## TEST-L

TEST-L was created so that novice users and Internet trainees can see how listserv works doing whatever they want, without disturbing the users of other discussion lists.

To subscribe send a message to:

**LISTSERV@VM.CNUCE.CNR.IT**
**TEST-L@VM.CNUCE.CNR.IT**

In the main body of the message write:

**subscribe Test-L**

## SPJ-L—A LIST FOR STUDENT JOURNALIST

The University of Maryland Chapter of the Society for Professional Journalists created SPJ-L for students, advisors and anyone interested in student press and media issues. This list is open to everyone but is specifically designed for SPJ members across the country.

To subscribe, send a message to:

**listserv@umdd.umd.edu**

In the body of the message write:

**SUB SPJ-C your name**

## CANLIT-L

CANLIT-L is a bilingual discussion group for those interested in Canadian literature, literary publishing, or Canadian children's literature.

To subscribe to send a message to:

**MAILSERV@NLC-BNC.CA**

In the main body of the message write:

**SUBSCRIBE CANLIT-L**

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NETPROJECT LABORATORY

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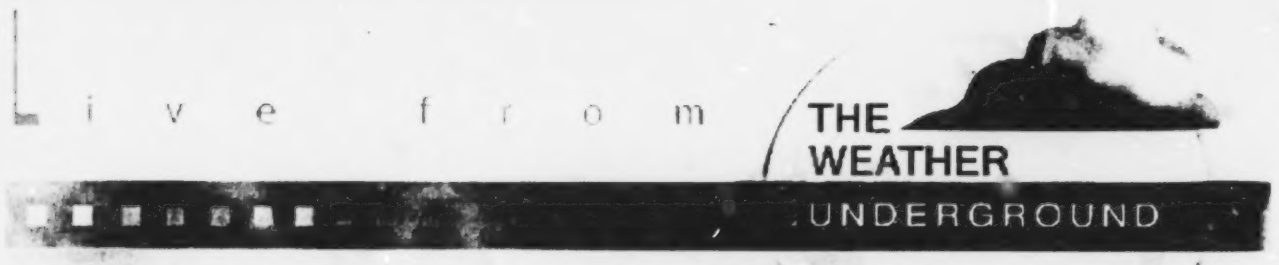


# The Virtual Classroom

TEACHING FOR THE 21ST CENTURY

**By Perry Samson**

The use of the Information Superhighway is quickly expanding the way education is being conducted in America. The rapid increase in the use of telecommunications is challenging K-12 classrooms to find engaging activities which can turn this rich resource of information into learning opportunities. The challenge to teachers is compounded by the need to both learn how to operate the new technologies and employ them effectively in large classroom situations and to expand their content depth to respond to student inquiries that follow. The information and imagery available on the Internet often give rise to deeper questions which teachers may feel ill-prepared to answer. The University of Michigan Weather Underground's Virtual Classroom is an effort to address these issues and aid educators in the development of new approaches that include technology and will meet the needs of the rising generation .

Beginning in September 1995, Professor Perry Samson, University of Michigan professor and director of the Weather Underground, will host an innovative, biweekly series of live, interactive, television shows aimed at teachers, administrators, and parents interested in K-12 education, Internet resources, and the use of real-time weather information in science. Aimed specifically at the professional development of teachers, the programs create a model for teachers to carry back into their classroom, a model that promotes project-based student centered learning environments using new technology and science ideas creatively.

The programs, interactive in design, allow participants to ask questions and respond to information through a simultaneous e-mail dialogue. A strength in the design of this series is its ability to allow an interactive discussion of environmental issues (severe weather, snowstorms, droughts, earthquakes, volcanic activity , El Nino, etc.) in a timely manner, matching current news items to science activities. The programs in the virtual classroom series are uplinked to a satellite from the University of Michigan. Teachers, administrators, parents or students can view the class either on their own or in groups. Participants will be encouraged to use their computer and modem to log into our server during the show. This interactive virtual classroom will allow participants to pose or answer questions live (or after the show).

Navigation on the Internet and pointers to information specific to the science curriculum ideas presented on the show are emphasized and made available to teachers for use in their classrooms. Participants are shown where on the Internet to find imagery and activities relevant to the topics discussed and are lead through a discussion of new methods to utilize these data in their classroom activities. Example activities utilizing current weather, climate and environmental conditions are demonstrated.

The University of Michigan Weather Underground sponsors this series. Initiated in 1992 with the support of the National Science Foundation, they provide a link between the scientists and facilities of the University of Michigan, Department of Atmospheric, Oceanic and Space Sciences, and the teachers and students of primary and secondary education. The group has developed a range of

*(Continued on Next Page, First Column)*



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THE VIRTUAL CLASSROOM

# THE WEATHER UNDERGROUND (Con't)

computer services designed for the specific goal of making science more accessible through interactive access to current weather, climate change, and environmental information. Used in commerce and schools across the country, **BlueSkies™** is a powerful Internet tool developed by the Weather Underground that allows interactive access to weather and environmental images and animations.

If you are interested in participating in this series from your home or school and would like to receive graduate credit for it, please contact:

The Weather Underground
Department of Atmospheric, Oceanic and Space Sciences
University of Michigan
Ann Arbor, MI 48109-2134

or
**URL:** http://groundhog.sprl.umich.edu
**e-mail:** *blueskies@umich.edu*
**Call:** *1-800-386-4141*

### *SCHEDULING*

Satellite broadcasts will be aired every other week beginning Monday, September 18, at 6:30 p.m. EST.

(Titles may change if opportunities arise in other areas of weather and climate)

**Disaster in the Classroom 9/18/95**

This first show overviews the images and services available via the Internet to K-12 classrooms interested in weather information. Spectacular and engaging, these images of weather as it's happening are a wonderful introduction to the value of the Internet as a resource in a classroom. The show explores a pedagogy to introduce and reinforce basic concepts of science through opportunistic use of weather, climate and environmental disasters as they happen.

**The 1995 Ozone Hole 10/2/95**

We will explore measurements being made in Antarctica of this year's growing Ozone Hole. This show describes the formation and movement of this manmade disaster and points out how to use this up-to-the-minute information to predict its future growth.

**The 1995 Hurricane Season 10/16/95**

This show describes the formation and movement of hurricanes and illustrates many services on the Internet to track and observe them daily. Classroom activities to track and monitor their destructive power will be demonstrated.

**Weather Folklore 10/30/95**

The day before Halloween we investigate the wealth of stories passed from generation to generation on how to forecast weather based on the sun, moon, colors in the sky, wind direction, and animal activities. Join us as we explore the physical reasons these folklore make sense. Participants will be asked to document folklore in their own area and share it with the program.

Future topics will include further interactive discussions of environmental issues such as severe weather, snowstorms, droughts, earthquakes, volcanic activity, El Nino, etc. The content of each show will be timed to match current conditions of weather and climate. The programs will feature interviews with other experts in the field. Participants are encouraged to be on-line with us to answer or ask questions during or between each show.

### *On-line Interaction / Satellite Information*

Web pages, listservers and e-mail will be available for ongoing communication throughout the year. During the shows, participants will log onto their local host (probably where they get their e-mail now) and type the command :

For UNIX Hosts: **telnet groundhog.sprl.umich.edu 2061** or

For VAX Hosts: **telnet groundhog.sprl.umich.edu /port=2061**

Specifics of which satellite you or your local cable company should tune to will be made available later in the summer. Be sure to check our homepage for the details. When information is available you should call your local cable company.

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# The ABC's of Internet Access

You've heard about the thrill of websurfing and the utility of e-mail and now you are ready to "get connected" to the Internet. Before you call an Internet access provider you need to understand some basic concepts about the Internet and Internet access options.

## BASIC CONCEPTS

### The TCP/IP Protocol

*The Transmission Control Protocol/ Internet Protocol or* **TCP/IP** is the most widely used networking protocol for wide area networking and is essential to direct and full Internet access. This protocol basically supports the addressing, routing, and delivery of data packets or "datagrams" on the Internet and allows information to flow between computers using different operating systems. TCP supports the exchange of information over a network or group of networks and IP deals with the routing of data across networks.

### IP Addressing

A computer directly attached to the Internet or host computer is assigned an IP address and a host domain name. The IP address is a numeric one that consists of four-decimal values separated by periods such as 122.67.11.3. These numbers are easily understood by the computers and provide important routing information about network and host addresses. *When setting up a computer for network access, you need to use IP addresses.*

### Domain Names

Computers directly connected to the Internet are also assigned domain names such as felix.com or gopher.cc.edu. Domain names are easier for humans to remember and use The IP addresses often change over time as computers are changed whereas the domain name stays fairly constant, even if the corresponding IP address of the new computer changes.

Domain names can be geographical such as pen.k12.va.us with va standing for virginia and us for the United States, or functional such as whitehouse.gov with gov standing for a government organization. Other functional domain endings include edu (educational institution), com (commercial institution), mil (military domain), net (network), and org (other organizations).

Most individual users will be assigned a domain name by their Internet provider. However, individuals, businesses, non-profits and other organizations can apply for specific domain names that indicate geographical presence or function. Service providers will help register the desired name with a NIC (Network Information Center) or you can do so on your own. If you change access providers, the domain name remains yours but you will need to have the new service provider register a change with the NIC.

### Physical Connections

Access to the Internet requires a physical connection to a TCP/IP network. There are two main types of physical connection for Internet access:

- Direct permanent attachment
- A dial-up or "switched" line connection.

### Host Versus Terminal Access

When a computer is directly connected to the Internet it is called a *host.* This connection can be permanent in the case of a direct permanent attachment or can be "activated" in a dial-up connection. A host connection always requires the installation of TCP/IP software on the machine to be connected.

In terminal access, the end user's computer is connected to a host computer which is directly connected to the Internet. The end user's workstation itself is not directly connected and becomes a "dumb terminal" when the user is using Internet applications on the host computer. In a terminal access, the end-user computer does not employ TCP/IP software.

*(Continued on next page)*

***If you want your computer to be directly connected to the Internet, it is essential that your computer system have a TCP/IP protocol suite installed and running and have a direct connection.***



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NetTeach News

A PRIMER

# The ABC's of Internet Access (Con't)

## ACCESS OPTIONS

### *Dedicated or Leased Lines*

The most common direct permanent attachments to the Internet are dedicated or leased lines. These leased lines run directly to a TCP/IP network. Typically this type of connection is used to link a local area network through a router to the Internet. These connections run at fast speeds from 56 kilobits per second up to 1.544 megabytes per second or (T1) or even faster. These kinds of speeds are desirable for more exotic Internet options such as CU-See-Me.

> ☞ ***In a SLIP or PPP dial-up access, you must activate the connection, and once you have dialed-in and successfully logged on your then your machine becomes directly connected to the Internet and remains so until you log off or are timed out.***

### *A SLIP or PPP Dial-Up Connection*

A dial-up PPP (Point-to-Point Protocol) or SLIP (Serial Line Internet Protocol) account allows you to operate as if you had a direct permanent attachment to the Internet at lower speeds. This kind of access supports TCP/IP software and thus allows access to the same sort of tools that one can access via a dedicated line connection to a TCP/IP network.

SLIP and PPP dial-up access accounts require high speed modem (9600 baud minimum and 14.4 or 28.8 baud recommended especially for using graphical web browsers) to connect your computer to the Internet service provider network.

In this account, *you must activate the connection, and once you have dialed-in and successfully logged on your machine becomes directly connected to the Internet.* Your access provider assigns your computer an IP address, which basically identifies your computer as a computer connected to the Internet.

This kind of connection requires software to dial the Internet service provider and establish the connection. This software and TCP/IP software is often provided by the Internet access provider for your operating system at a minimal cost.

### *A Dial-up Shell Account*

Direct dial-up shell accounts are basically terminal connections. This means that you use the Internet access software that is installed and operating on your service provider's computer .These connections do not support the TCP/IP which means that *your computer is not a host machine or directly connected to the Internet.* These kinds of connections can work using low-speed modems.(9600 baud and below). Typically, you are able to exchange e-mail and to a limited degree use other Internet tools such as telnet, ftp, and gopher. This sort of connection does not allow you to directly surf the world wide web using such graphical browsers as Netscape or Navigator nor will it allow others to access a Web page located on your local machine. Typically, such terminal connections will not support the transfer of large files.

### *Commercial Accounts*

There are many private network companies such as America Online, Compuserve, and Prodigy, that offer gateways to the Internet. Accounts with commercial networks typically offer e-mail gateways to the Internet and some like America On-Line are providing access to the World Wide Web using their own browsers. These companies provide users with their own network access software and do not typically support TCP/IP software.

## ACCESS ECONOMICS

Generally dial-up shell accounts and commercial accounts are cheaper than either SLIP or PPP dial-up accounts or direct permanent Internet connections. Direct permanent connections involve the most expensive upfront investment and monthly charges but are the most economical options for organizations with multiple users and LANS (local area networks).

Most dial-up SLIP or PPP accounts offer some unlimited time usage per month and after that charge a per hour rate that can range from $1 to over $3 an hour for each additional hour.

Many commercial networks offer promotions of a free access trial period. These promotions are available in popular computing magazines and in books as well as sometimes through direct mail offerings.



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# How To Find A Service Provider

The best way to find out about local access options is to spend time reading the local newspaper, particularly the business and technology sections, talking to companies or local colleges and universities in the area as well as consulting with neighbors and friends. There is usually someone in the community who has Internet access and can be of some assistance.

## SERVICE PROVIDERS

There are typically a variety of service providers in a given location and region. Some of the main types of service providers are:

- ***Specialized Internet Access companies*** — some of a local nature and others having a national and international presence such as The Pipeline, Uunet Technologies, PSI Inc.,
- ***Statewide networks*** — some exclusively for schools such as Virginia's Public Education Network (VAPEN), the Texas Education Network (TENET), the Florida Information and Research Network (FIRN).
- ***Universities or community colleges*** — many of which are linked to midlevel networks
- ***Major commercial providers*** — such as America On-Line, Prodigy, Compuserve, Microsoft Network
- ***Community Networks*** — *such as CapAccess, Cleveland Freenet, Blacksburg*
- ***Telephone companies and other information firms*** — such as cable companies, for example, internetMCI

## ONLINE ACCESS PROVIDER INFORMATION

### *The WELLgopher*

*To navigate to the Wellgopher, head to:*
*Other Gopher Servers/*
*North America/*
*USA/*
*Californial/*
*The WELLgopher.*

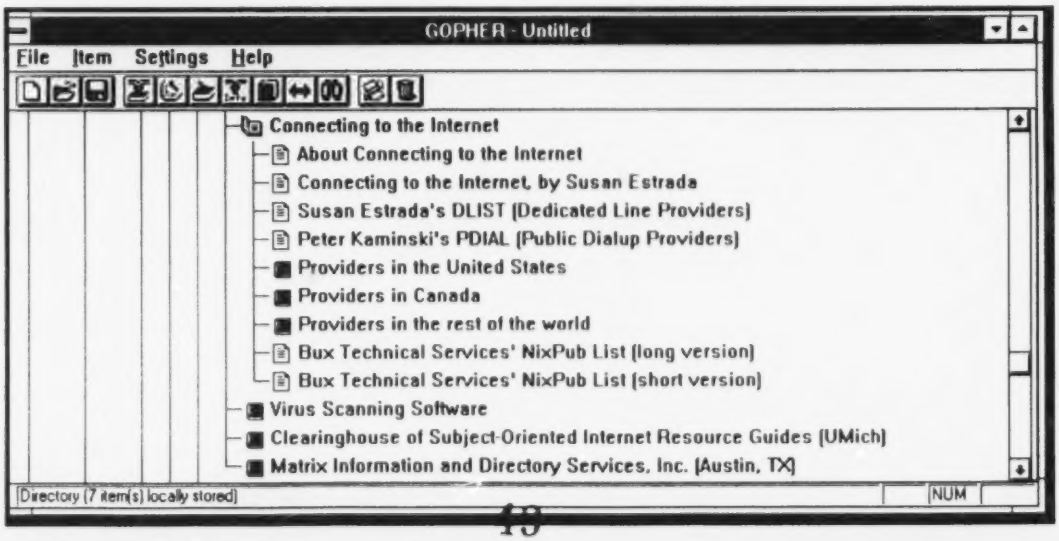
At the main menu, go to The Matrix (Information about global networks), thern at the next menu go to Connecting to the Internet.

At the Connecting to the Internet Menu you can access Susan Estrada's DList (A list of dedicated Line Providers) and Peter Kaminski's PDIAL (Public Dialup Providers) as well as a lengthy list of providers in Canada, The United States, and the Rest of the World.

You can also go to The Well Web Site http://www.well.com/

## RECOMMENDED BOOK

***Connecting to the Internet*** by Susan Estrada (O'Reilly & Associates, Inc. Sebastopol, CA, 1993, ISBN 1-56592-061-9


GOPHER - Untitled
File Item Settings Help
Connecting to the Internet
About Connecting to the Internet
Connecting to the Internet, by Susan Estrada
Susan Estrada's DLIST (Dedicated Line Providers)
Peter Kaminski's PDIAL (Public Dialup Providers)
Providers in the United States
Providers in Canada
Providers in the rest of the world
Bux Technical Services' NixPub List (long version)
Bux Technical Services' NixPub List (short version)
Virus Scanning Software
Clearinghouse of Subject-Oriented Internet Resource Guides (UMich)
Matrix Information and Directory Services, Inc. (Austin, TX)
Directory (7 item(s) locally stored)
NUM



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NetTeach News

# A SAMPLER OF ACCESS PROVIDERS

*In this sampler of access providers we are providing the descriptions of some access options and facilities given by the access companies themselves at the time we went to print. These are only some access options and listed prices are always subject to change so we urge you to directly contact the providers for more complete and up-to-date information about their services and prices. The mere inclusion of these access providers in this sampler is not an endorsement of the provider but is merely used to give you an example of the variety of access providers and services that are available to you.*

## UUNET TECHNOLOGIES, INC.

*3060 Williams Drive, Fairfax, VA 22031-4648*
*Voice:+1 800-488-6383, +1 703-206-5600*
*Fax: +1 703-206-5601,*
*E-mail: info@uu.net,*
*Web Site: http://www.uu.net*

In January, 1990, UUNET launched AlterNet (R), the first commercial TCP/IP network service. Alternet customers can choose from dial up or high-speed leased line options for direct access to the full range of services available over the Internet.

**OPTIONS**

AlterDial(R), provides high-quality, low-priced Internet connectivity to small office LANs and individual computer users.

AlterDial connects your desktop or laptop computer directly to the Internet. AlterDial supplies occasional or low-volume Internet access to your office or home, providing a total networking solution to small businesses, telecommuters, and employees in the field. You need only a modem, a standard analog phone line, and software implementing the PPP protocol, all of which are available through UUNET. And depending on your usage requirements, you can choose billing by connect time or at a fixed monthly rate.

Every AlterDial plan permits multiple user mailboxes and registration of your own unique domain name. Traveling users can seamlessly connect to any of UUNET's hubs around the country, or to a convenient 800 number.

**Service Options**

*Metered Client:* Service to an individual computer, billed according to usage.

- 25 hours per month of local usage standard.
- One mailbox and one newsreader standard.
- Client software, unique domain name, and additional mailboxes available at extra charge.

*Metered LAN:* Service to an entire LAN, billed according to usage.

- Dedicated IP addresses for your internal network and unique domain name standard.
- One mailbox and one newsreader standard.
- Additional POP mailboxes and NNTP newsreaders available at extra charge.

*Dedicated:* Flat-rated service over a full-time analog dial-up line.

- Dedicated modem at our hub and IP addresses for your internal network, SMTP mail and news delivery, and unique domain name standard.
- Additional mailboxes and newsreaders available at extra charge.

**COSTS:**

***Metered Client***

$30/month basic service fee, including 25 hours of local usage, Internet mail and USENET news for one user
$2.00/hour connection cost to local hub (after first 25 hours),
$6/hour surcharge to 800 number (at all times)
$10/month optional charge for each additional POP e-mail account
$25 one-time start-up fee

***Metered LAN Cost***

$49/month basic service fee
$3/hour connection cost to local hub,
$9/hour to 800 number
$10/month optional charge each for Internet mail and USENET news via UUCP/TCP
$10/month optional charge for each POP account or $20 per concurrent NNTP session
$499 one-time start-up fee

***Dedicated Cost***

$250/month service charge for unlimited use, including Internet mail and USENET news $750 one-time start-up fee Line costs are not included. Contact AlterNet Sales for pricing

## NETCOM On-Line Communications Services

*3031 Tisch Way, San Jose, CA 95128, Voice: + 1408-983-5950 * Sales: 800-353-6600 * Fax: 408-241-9145, E-mail:info@netcom.com Web Site: http://www.netcom.com/netcom/numbers.html*

NETCOM has provided high quality Internet services since 1988. Connections to NETCOM can be made by any computer workstation or server with a high speed V.32bis or V.42bis modem and PPP (Point-to-point Protocol) or SLIP (Serial Line Internet Protocol) communications software. NETCOM provides Internet Domain registration services for your node, provides you with a Class C IP address, and routes Internet traffic (e.g., electronic mail) to your site. NETCOM can also provide you with a network news feed.

Besides the monthly service fee, there is an installation fee associated with each type of network connection.

**OPTIONS:**
9600/14400 **SLIP Dialup (dedicated port)** $160.00/month
28800 **SLIP Dialup (dedicated port)** .....$225.00/month

*(continued on next page, first column)*

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# A SAMPLER OF ACCESS PROVIDERS

***NETCOM Continued***

*A dedicated port, SLIP dialup connection will provide your company with unlimited dialup access to any of NETCOM's local access points and direct Internet access for a low, fixed monthly fee.*

56KB **leased line** .....$400.00/month
T1 **leased line** .....$1000.00/month

*These higher speed connections are available for sites with higher transmission requirements.*

**NETCOM's NetCruiser(tm)**

NETCOM has developed a graphical user interface for personal computers using Microsoft's WINDOWS operating environment. NetCruiser allows you to click on icons or use menus to use the common Internet Services. NetCruiser uses dynamic Compressed SLIP to give your computer a direct connection to the Internet allowing you to transfer files directly to your computer without an intermediate host system. NetCruiser accounts do not include host dial access to the NETCOM host systems. NetCruiser accounts include 40 hours of prime time access at no extra charge. Prime time is defined as 9 am to Midnight, Monday through Friday. Non-prime time is Midnight to 9 am Monday through Thursday and from Midnight Friday night to 9 am Monday morning. If you accrue more than 40 prime time hours, the charge is $2.00 per hour.

**NetCruiser accounts** (charged to a major credit card) .$19.95/month
NetCruiser setup fee ....$25.00
NetCruiser business accounts (via business check) ..$239.40/year
NetCruiser business account setup fee.....$50.00

**PERSONAL HOST DIALUP ACCOUNT WITH UNIX SHELL**

NETCOM offers personal accounts on NETCOM's UNIX hosts with unlimited use for a flat monthly fee. All shell account users may choose from csh, tcsh, ksh, sh, bash, or a custom, menu-driven shells. With a personal account you can expect 24 hour access to E-Mail, USENET news, ftp, telnet, IRC, compilers, games, text processing tools, editors, and file transfer utilities (u/x/y/z/-modem, kermit) as well as a gopher client and the Lynx web browser. NETCOM also offers you "electronic newspaper" subscription; NETCOM serves a commercial news feed with, for example, UPI wire-service news, reports on yesterday's stock market, computer industry news, syndicated columns and features, financial information, and news on thousands of other topics. This service is available via the netnews newsreaders.

Besides the monthly service fee, there is an installation fee associated with each dialup account.

**Dialup Account**
(invoiced).....$19.50/month
Dialup Account (Credit Card, Auto-Billed).....$17.50/monthDialup Account setup fee .....$30.00

For a personal account, you can register by calling NETCOM at 800-353-6600 or 1-408-983-5950 and asking for personal sales.

## *CICNet, Inc.*

*CICNet Marketing and Sales*
*2901 Hubbard, Ann Arbor, MI 48105*
*Voice: + 1 313-998-6703 or +1 800-947-4754, Fax: +1 313-998-6105, Email: info@cic.net, Web Site: http://www.cic.net/*

CICNet,inc. is a non-profit regional network started by the Committee for Institutional Cooperation (CIC). The CIC is a consortium started by the Big Ten schools some 26 years ago. CICNet operates a high-speed computer network in the states of Michigan, Illinois, Indiana, Ohio, Wisconsin, Minnesota, and Iowa. Service is available to colleges, universities, K-12, other non-profits as well as commercial organizations.

**Full Service Connections**
**Circuit Costs**

Full Service Connections - Includes 7/24 end-to-end monitoring, equipmemt maintenance, etc.

Monthly service fees
(*Includes the cost of the dedicated circuit in many cases)

| | |
|---|---|
| 56Kbps connection | $1,000.00/mo |
| T-1 connection | $2,000.00/mo |

One-time Network Access Fee
This fee includes a Cisco Systems router, CSU/DSU, and network management equipment which is located on the customer premises and is configured to interface with the customer's ethernet or token ring local area network.

| | |
|---|---|
| 56 kbs Connection | $5,995.00 |
| T-1 Connection | $9,995.00 |

For full service connections the customer must also provide a dedicated, voice-grade circuit (POTS line) located proximate to the CICNet owned router located on the customer premises. This circuit is for the exclusive use of the CICNet NOC staff in providing out of band management for the router and other network components. *There will be an additional monthly fee of $275.00 for 56Kbs or $1,600 for T-1 if we are not able to establish the customers connection within the same lata as a CICNet point-of-presence.

Circuit Costs

All CICNet bitPIPE connections include either a 56 kbs or T-1 circuit fromthe customer site to the CICNet backbone node. The montly service fee will typically include the cost of the 56kbs or T-1 circuit. (* There will be an additional monthly fee of $275 for 56kbs connections or $1,600 for T-1 connections charged to those organizations who are not able to connect into a local - proximate to the customer- CICNet POP.)

## *IndyNet INTERNET Gateway*

*5348 N.Tacoma, Indianapolis IN 46220; Voice: +1 (317) 251-5208*

IndyNet INTERNET Gateway offers complete Internet access. It was founded by a local Indiana corporation (LFD Enterprises, Inc.) that has been in business since 1980 and has offered Internet access since December 1993.

- IndyNet INTERNET Gateway supports:
- Easy Menu-Driven Interface
- Worldwide E-Mail
- FTP (
- TELNET (
- ARCHIE
- IRC
- USENET NEWS (
- GOPHER
- WWW (World-Wide-Web)

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NetTeach News

# A SAMPLER OF ACCESS PROVIDERS

## Performance Systems International, Inc.

*510 Huntmar Park Drive, Herndon, VA 22070;Voice: +1 (703) 709-0300, Fax: +1 (703) 904-1207; E-Mail: info@psi.com; Web Site: http://www.psi.net/*

PSI was organized in 1989 and began with just 40 customers. PSI is now one of the largest Internet providers in the world. Today, PSI has Points-of-Presence in over 80 U.S. metropolitan areas.

PSI provides a full range of Internet access options for individuals and companies. Last year, PSI introduced the highly popular InterRamp Service that provides state-of-the-art personal access.

### InterRamp

InterRamp offers individual users dial-up PPP access to the Internet. Your computer will require TCP/IP software that is available for various platforms from PSI and a v.32bis/v.34 modem and a standard telephone line, or an ISDN TA and an ISDN BRI.

Your InterRamp Account includes:

- PPP dialup access to the Internet
- An electronic mailbox accessed through POP3
- A USENET News account with unlimited access
- Access to the InterRamp Users Home Page

InterRamp includes a POP3 electronic mailbox on a PSINet mail server with up to 20 megabytes of storage. You are assigned an e-mail address from the interramp.com.domain.

InterRamp Rates:
First 29 hours of Prime Time Usage...US $29
Includes Unlimited Non Prime Time Usage (Prime Time: Mon-Fri, 8 a.m. - 11 p.m. Local time at the point you connect to the PSINet network. Non Prime Time: Mon-Fri, 11 p.m. - 8 a.m. Saturday and Sunday)

ISDN Usage Over 29 Prime Time Hours...US $ 1.50/Hr

V.32bis and V.34 Usage Over Intial Prime Time 29 Hours...US $1.50/Hr.

(Pricing effective through December 31, 1995)

## INDYNET (Continued)

Basic Options and Fees:

MENU - $10/month, no hourly connect fee, 300-14400 baud with easy menu
SLIP - $15/month, no hourly connect fee, 9600-14000 baud access with slip (28.8k baud lines available)

Access from areas outside Indianapolis carries a $5/month surcharge.

Special services:

UUCP - $1/hour, $40/month minimum, 2400-14400 baud with UUCP e-mail/news
LIST - $50/month for moderate use (e-mail list-serve)
LINE - $100 setup, $100/month for private line (24hrs, 7 days/week)

## Pipeline New York

*150 Broadway, Suite 1710, New York, NY 10038; Voice: +1 (212) 267-3636; E-Mail: staff@pipeline.com; gopher: gopher.pipelin.com, Wen Site: http://www.pipeline.com/*

Pipeline was founded in December 1993 by James Glick, former New York Times reporter and author of the bestselling book, *Chaos—Making a New Science.*—along with software developer Uday Ivatury. Starting in July 1995, Pipelin expanded its local access to include New Jersey, Connecticut and Eastern Long Island Via PSI's network.

Individual User Options

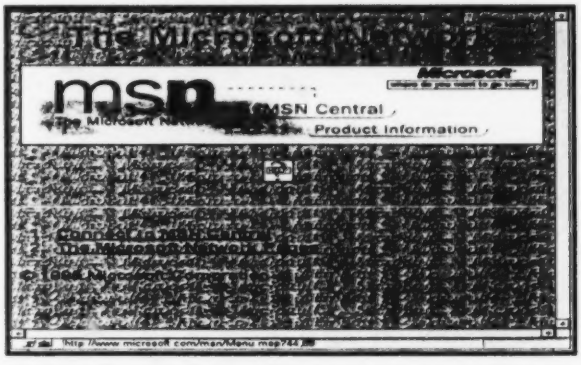
The TIW (Toe-in-the-Water) Plan: $9.95 monthly for 5 hours (and then $2.50 per hour after those 5 hours).

The IIMO (Internet-Is-My-Oyster) Plan: $19.95 or unlimited time.

You pay one rate of US $19.95 a month regardless of usage . You can also opt for the $5 for 5 hours option and then pay only $1.50 an hour thereafter.

Business Options:
Corporate rate of $20 per month and $2 per hour of connect time; this fee applies to each user.

You can try out Pipeline USA software on an IBM PC or compatible 486 pr higher with 8MB or more of RAM running Windows 3.1 or later. It's free for 7 days for new users.




**Microsoft Network**
**URL: http://www.msn.com/**



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NetProject NetTeach News

# Global SchoolNet Foundation's Creates Internet Projects Registry

The Global SchoolNet Foundation recently created a central registry of open K-12 Internet projects. GSN invites any project developers or anyone else with knowledge of interesting Internet-based K12 projects open to all participants to contribute to the registry. The information will be presented in a matrix divided by the month in which the project begins. This matrix is accessible via the WWWeb and is also distributed via the HILITES mailing list.

## *How to Submit Projects to the Registry*

If you know of projects that are open to outside participants, please send a message to:

**proj.register@gsn.org**

Make sure the message INCLUDES the following information:

- *Month and year project BEGINS*
- *How long the project will last (approx.)*
- *Name of project*
- *The email address for the contact person*
- *A one-two sentence project description*
- *OPTIONAL: The URL where potential participants can find additional information*

## *Examples of Current Listings*

**On-going (appropriate to join at any time)**
*Where on the Globe is Roger*
*Scientist-on-Tap*

**September 1995**
*Intercultural Sensitivity*
*Geogame Project*
*Cyber English*
*WCIEP 95 World Cultures Information Exchange Project*
*On-Line Conference w/ Japan*

**October 1995**
*California WWWeb Project (10/31 - 4/15)*
*NASA's LIVE FROM THE STRATOSPHERE*

**November 1995**
*Letters to Santa (11/1 - 12:15)*
*UNESCO Time Project*

**February 1996**
*The Noon Project*
*Kids As Global*
*Journey North*
*The Read In*

**March 1996**
*Mayaquest II (6 weeks)*

**April 1996**
*Save the Beaches*

## *HOW TO ACCESS THE REGISTRY*

For those with world wide web access head to the following www location:

**http://gsn.org/gsn/projects.registry.html**

You can also subscribe to the HILITES mailing list by sending a message to:

**lists@gsn.org**

In the body of the message type:

**subscribe hilites**

## *Information About the Global SchoolNet Foundation*

**For more information about the Global SchoolNet Foundation contact:**

Yvonne Marie Andres, Global Schoolhouse/Global SchoolNet Foundation
7040 Avenida Encinas 104-281, Carlsbad, CA 92009
WWWeb: http://gsn.org
Voice (619) 433-3413
FAX (619) 931-5934
Email: andresyv@cerf.net



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NetTeach News

# SOME EXCITING PROJECTS FOR 1995-1996

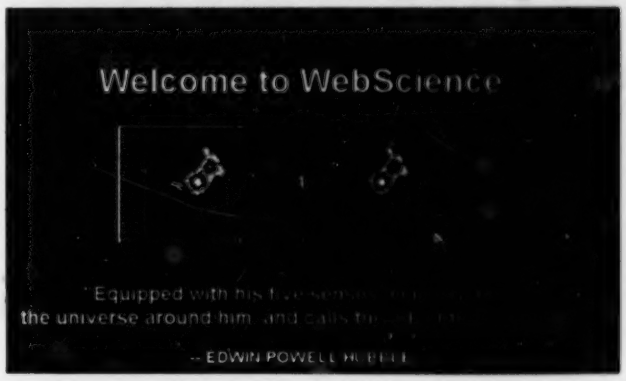
## SPACE ISLAND

This year students at the Don Bosco High School in Rosemead, California will be collaborating with students in four hundred schools worldwide located in over twenty-eight countries. Students will also be working on the project with the author of a book called "External Tanks an Economic Solution to California." The author, Mr.Gene Meyers, an Industrial Engineer, is proposing to the Senate and House a bill that would allow the private industries to use the external tank of the Shuttle craft (10m by 50m), which are now discarded once the shuttlecraft reaches orbit, and connect them into a space station. Mr. Meyers also envisions that the space station, he calls Space Islands, will be used by international interest for development and research.

The participating high school students will consider a space station created from the ET's of present space shuttles. The American Shuttle craft's E.T. is approximately 9m by 50m. The ET is composed of many pounds of AL alloy. Over the past ten (10) years it is suggested that about 10K tons of tankage has been discarded. That 10K could supply the material for structural supports, trusses, outer skin for outer orbital infrastructure.

The students will study and construct a habitat that might be found on board a spacestation that could be used by an international community. Students will have to study enclosed environmental habitats (i.e., submarines, oil platforms, Biosphere 2), common denominators in cultures, design, colors, art, and much more that will help an international community work together in space. There are many projects that can be joined to this project in the fields of mathematics, physics, social sciences, law, religion , ecology, solar energy and alternative power sources, astronomy, symbolic international language codes, recreation, food preparations, working conditions, recycling of raw or used material, and much more.

For additional information contact:
Mr. Peter Romero
Don Bosco High School
1151 San Gabriel Blvd., Rosemead, Calif. 91770
Work Phone: (818) 307-6573, Home Phone: (818) 331-5451, Fax: (818) 280-9316, Email:: Oceanfront@aol.com




Throughout the 1995-1996 academic year, classes of intermediate and middle level students from around the world will use the world wide web and other technologies to collaboratively explore various space science themes.

Students will exchange project related information and data using e-mail and electronic essays generated by individual students, cooperative groups, or by whole classes. Students will research world wide web sites to include as resources, and exchange GIF files, Hypercard or HyperStudio presentations, and other computer-based resources.

Twelve upper intermediate to middle level educators and their classes will server as Project Partners. However, general participation is open to any interested educator and class, regardless of grade level, with access to the Internet and the WebScience World Wide Web Site.

Project Partners will be encouraged to use AIMS (Activities Integrating Mathematics and Science from the AIMS Education Foundation) and GEMS (Great Explorations in Math and Science from the Lawrence Hall of Science). These teacher guides contain integrated math and science activities of a constructionist nature.

To find out more about the project, contact:
Roger Stryker
Williams Elementary School
Austin Independent School District
500 Mairo Street
Austin, TX 78748
regor@tenet.edu
Voice: +1 512-282-2813
or go to the WebScience WWW Site at:

**http://marple.as.utexas.edu:80/~WebSci/**

or send e-mail to:

54 **science@tenet.edu**

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## PBS's Back to School

This month, the PBS Internet Publishing Group introduced a "Back to School" area on their World Wide Web site. This area includes information about:

- Public Television K-12 Learning Services: Instructional TV, PBS National Programming, Teacher Training Initiatives, Electronic Field Trips, MATHLINE, etc.
- Meet Alice Cahn, Director of PBS Children's Programmong in an interactive discussion
- Hyperlinks to PBS Educational Materials

Point to the PBS Web site at:

**http://www.pbs.org**

## CPB ANNOUNCES TESTBED PROJECT GRANT RECIPIENTS

In August, CPB officially announced 15 projects as recipients of their K12 Internet Testbed Grants. These projects team up community schools with local public broadcasters in the hopes of creating WWW-based curricular projects.

Indiana Public Broadcasting Service
KCET/Los Angeles
KIXE/Redding, CA
KTSC/Pueblo, CO
KUNM/Albuquerque UNM School of Music
KYUK/Bethel, AK
Mississippi AET/Meridian, MS
New Hampshire Public Radio
Smoky Hills Public Television/Ellsworth, KS
WHRO/Norfolk, VA
WHYY/Philadelphia, PA
Wisconsin Educational Communications Board/De Pere, WI
WMHT/Troy, NY
NYLink Consortium (WNET/New York in conjunction with WSKG/Binghamton, WNED/Buffalo, WCFE/Plattsburgh, WXXI/Rochester and WCNY/Syracuse)
WNYE/New York

Web surfers can find out more about the projects by going to:

**http://k12.cnidr.org:90/testbed.pr.html.**

## NCTM -L Available On the Web

The Geometry Forum is now making NCTM-L available to web surfers in a browseable web version. NCTM-L is an unmoderated list which is open to anyone with an interest in mathematics education and the NCTM standards.

***NCTM-L ON THE WORLD WIDE WEB***

The NCTM-L discussion list archives on the web are located at:

**http://forum.swarthmore.edu/nctm-l.html**

The discussion topics are threaded so that you can read all the message on that topic at once rather than reading them in chronological order of their posting.

You have two options. You can view nctm-l on the Web without creating an account, or you can create a newsreading account. This latter option allows you to read news on The Geometry Forum machine and will keep track of your reading preferences and the articles that you've read.

For more information about this web site contact Annie Fetter at <annie@forum.swarthmore.edu>

***To Join the NCTM-L Mailing List***

For those of you without web access or who prefer mailing lists you can subscribe to NCTM-L by sending a message to:

**majordomo@forum.swarthmore.edu**

In the body of the message write:

**subscribe nctm-l YourFirstName YourLastName**



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NetTeach News

THE RESOURCE CENTER

# Some Unique Resource Centers for NetTeachers

We recently took a cyberspace tour looking for interesting web resource centers that contained electronic journals, online essays and other research material for educators. We urge all NTN readers to keep in mind that the Internet does offer the opportunity to access finished information as well as data sets not readily available anywhere else.

## PATHWAYS to School Improvement Web

***http://www.ncrel.org/ncrel/sdrs/pathways.htm***

**The North Central Regional Education Lab** has put together this excellent web resource area for teachers and parents.

Some current online essays are:

*Why Should Assessment Be Based on a Vision of Learning?—New Assessments for Learning*

*What Does Research Say About Assessment?*

*What Does Research Say About Early Childhood Education?*

## THE MORINO INSTITUTE

***http://www.morino.org/***

**Directory of Public Access Networks** — an excellent online catalogue of public access networking resources.

*The Promise and Challenge of the New Communications Age* — a preliminary draft of this paper on the threats and promises of the Communications Age is available for reading.

## The Coalition of Essentials Schools

***http://archive.phish.net/eos1/erica/Coalition.html***

***Essays:***
*Eleven Suggestions for Reforms That Are Radical — But Shouldn't Be* by Grant Wiggins

*ReThinking Standards* by Theodore Sizer

## ILTweb

***http://www.ilt.columbia.edu/***

*WWW Constructivist Project Design Guide — http://www.ilt.columbia.edu/k12/livetext/webcurr.html*
*A guide to help experienced educators to design constructivist, cooperative learning projects around the World Wide Web*

*The Institute for Learning Technologies: A Pedagogy for the 21st Century* by Joshua H. Reibel — A summary white paper on technology and school reform.

## The VIRTUAL SCHOOLHOUSE— The Techie's Corner

***http://sunsite.unc.edu/cisco/tech.html***

*Teaching and Publishing on the World Wide Web* by Harry Kriz

*Internetworking Technology Overview*

*Internetworking: Planning and Implementing a Wide-Area Network for K-12 Schools* by Randall Bigelow

*The Internet Companion: A Beginning Guide to Global Networking* by Tracy LaQuey Parker

## California Department of Education — K12 Network Planning Unit

***http://goldmine.cde.ca.gov/WWW/K-12/K-12_home.html***

*K-12 Network Technology Planning Guide* — an 892K booklet setting statewide networking standards and addressing key issues of educational internetworking.

*Benefits of School Networking* by Laurie Maak and Robert Carlitz — a paper on the basic issues related to school networking

*Stages of Internet Connectivity for School Networking* by Robert Carlitz and Gene Hastings — Paper describing the costs and benefits associated with various stages of connectivity.

## THE NII AWARDS — Success in Cyberspace

***http://www.gii-awards.com/success.htm***

Ask Advice of those from the Entrants of the 1995 NII Awards.



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# THE GLOBAL KIOSK

## September 1995

**20-22 September EDNET 95** *The Educational Technology and Telecommunications Markets Conference. Loews Coronado Bay Resort, San Diego, CA. For more information, send mail to: EdNET 95, Nelson B. Heller & Associates, 1910 First Street, Suite 303, Highland Park, IL 60035-3146, call: +1 708-441-2920, or send e-mail to: EdNET95@aol.com*

**27-29 September Networld+Interop 95** *Georgia World Congress Center, Atlanta, GA. Over 500 leading suppliers and the networking industry's top experts will join together to demonstrate the latest in networking and telecommunications-gate on the world wide web to http://www.interop.com*

## October 1995

**24-27 October VI International Conference on Technology and Distance Education.** *San Jose, Costa Rica. Sponsored by NOVA Southeastern University and Universidad Estatal a Distancia. Keynote Speakers: Dr. Roberto Dobles, Minister of Science and Technology, Costa Rica; Dr. Michael Moore, Director of the American Center of Distance Education, Penn State. For information send mail to: NSU, FIschler Center for the Advancement of Education, 3301 College Ave, Fort Lauderdale, FL, . telp: +1 305-476-8969, fax: +1 305-423-1224, or e-mail: pujolsj@alpha.acasr.nova.edu*

**25-27 October WWWDEV conference** *in Fredericton, NB. Should prove to be a worthwhile meeting for those interested in developing world wide web pages. For information contact:*
*Rik Hall, Program Director - Distance Education and Off-Campus Services, University of New Brunswick - Continuing Education Centre, Duffie Drive - PO Box 4400, Fredericton, NB E3B 5A3. Tel: +1 (506) 453-4854 Fax + 1(506) 453-3572 . E-mail to Hall@UNB.CA*

**25-27 October ALASKA Communications Technology Conference '95** *in Juneau, Alaska. The goals of this conference are to educate Alaskans about using available communications technology, to discuss future communications technology needs in Alaska, and to demonstrate business opportunities available to Alaskans using communications technology.*
*For more information contact: Kari Westlund,Juneau Convention and Visitors Bureau,369 South Franklin, Suite 201*
*Juneau, Alaska 99801,Tel: +1 (907)586-1737 , Fax: + 1 (907)586-1449 , e-mail to: ALASKAJNU@AOL.COM*

**25-27 October Ninth Annual Technology & Learning Conference**, Inforum in Atlanta, GA. *Sponsored by the National School Boards Association's Institute for the Transfer of Technology to Education. For more information send mail to:National School Boards Association, Institute for the Transfer of Technology to Education, 1680 Duke Street, Alexandria, VA 22314-9973 or call: +1 800 950-6722.*

**26-29 October. AAHE 6th National Conference on School/College Collaboration.** *Renaissance Washington D.C. Hotel .. For information call Carol Stoel or Grace Moy at 202/293-6440 ext. 34 or ext. 15 or e-mail: cstoel@capcon.net*

**30 October- 1 November ONLINE 95 and Multimedia Schools** *The Palmer House Hilton, Chicago, IL. For more information contact: Tasha Heinrichs, 462 Danbury Road, Wilton, Ct 06897-2126, or call: +1 203-761-1466.*

## November 1995

**30 November-3 December Tel Ed'95** *Broward County Convention Center, Fort Lauderdale, Florida. Sponsored by ISTE. For more information contact: Cathy Hutchins, Tel: +1 904-824-2955, Fax: +1 904-829-5958. e-mail <hutchic@ mail.firn.edu>; Margaret Riel, Tel: +1 619-943-1314, Fax: +1 619-943-1314, and e-mail <mriel@weber.ucsd.edu>*

## December 1995

**2 December 1995** ***First Annual Classroom Telecommunication Conference****, Pasadena Conference Center. Sponsored by the Association for Classroom Technologies (ACT/ CUE).Keynote address by Al Rgoers, Executive Director, Global Schoolnet Foundation. For more information send mail to:: C.T.C. P.O. Box 5546, Pasadena, CA 91117, e-mail to: <dkresse@cello.gina.calstate.edu> and call: +1 818-792-8546.*

5-8 December **I C C E 95, International Conference on Computers in Education** *Raffles City Convention Centre Singapore Sponsored by Association for the Advancement of Computing in Education Asia-Pacific Chapter (AACE APC) ICCE 95 will focus on a broad spectrum of inter-disciplinary research topics concerned with theories, technologies and practices of applying computers in education. It aims to provide a forum for scientific interchange among educators, cognitive scientists, computer scientists, and practitioners throughout the world, and especially from the Asia-Pacific region. For more information contact:*
*ICCE 95/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, E-mail: AACE@virginia.edu, tel: +1 804-973-3987; Fax: + 1804-978-7449 ICCE 95/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, E-mail: AACE@virginia.edu, tel: +1 804-973-3987, Fax: + 1804-978-7449.*



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# MICROSOFT'S Focus on K12 Online Center

Focus on K-12
Microsoft
Products
Resources
Partnerships
Special Offers
Upcoming Events
Welcome to the Microsoft® Focus on K-12 Homepage!
This is an area where you can find the latest products and programs offered by Microsoft for K-12 educators, parents, and students. Stay tuned

**FOCUS on K-12 Can be found at:**
**URL:http://www.microsoft.com/k-12/**

Microsoft has added the Focus on K-12 page to keep parents, educators and students well-informed about Microsoft Educational products and programs and to provide value-added information on how to effectively apply these software programs in the learning process.

There are five main sections: Products, Resources, Special Offers, Partnerships, and Upcoming Events.

The RESOURCES section contains curriculum ideas and teacher activity guides for using Microsoft products in the classroom or at home, Library Media Center Activities, Scholarship programs, the Education Server Evaluation Program, and a True Stories area.

In the PRODUCTS area, there is information on Microsoft's educational software as well as curriculum activities geared to these products.

The PARTNERSHIPS section contains information on such Microsoft programs as the Microsoft's Teacher Education Partnership Program, Children's Museum Partnership and the State Department of Education Partnerships.

The Special Offers and Upcoming Events pages are still under development.

NETTEACH NEWS is the chosen newsletter for pioneer networking educators worldwide. It provides a forum for the exchange of information about how advanced networking technologies are changing society, and in particular the way we teach,learn, and deal with one another. It is intended as a platform for many varied personal and collective travels to new "networlds" for educators around the globe and a pathway to emerging global living learning villages.

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Unsolicited submissions are accepted.

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RIE

Connecting Learners Around The Globe

# NetTeach News

SEPTEMBER 1995 VOLUME 3, NUMBER 4

***French Nuclear Test***
**http://www.ageo.gov.au/image/mushroom.gif**

***"Life is, in fact, a battle...Evil is insolent and strong; beauty enchanting but rare; goodness very apt to be weak;folly very apt to be defiant; wickedness to carry the day; imbeciles to be in great places, people of sense in small, and mankind generally, unhappy. But the world as it stands is no illusion, no phantasm, no evil dream of a night; we wake up to it again for ever and ever; we can neither forget it nor deny it nor dispense with it."***

*"Ivan Turgenieff" in French Poets and Novelist* by Henry James, 1878

***The Last Sunrise***
**http://www.webcarmel.com/harold1.htm**

## On Creating A Democratic Internet
## ARPANET– US DoD-Sponsored Network

***This marks the first of a series of articles that will look at forces that have and are shaping the Internet. In this first article, we will look at the strong influence of the US defense advanced research community.***

### *Understanding the Past*

It is important to understand the past in order to build the future, and the past of the Internet was the US Department of Defense. The original reason behind the creation of ARPANET, the precursor of the Internet, was to create a communications system that would carry command and control information in the event of a nuclear attack.

In the mid-sixties, ARPA —The Advanced Research Projects Agency of the US Department of Defense. (In 1972, ARPA was renamed DARPA, The Defense Advanced Research Projects Agency.) sponsored research into areas crucial to the successful linking of geographically remote computers in a way that allowed (1) remote login access, and (2) data and resources to be shared. In particular, ARPA's support of packet switching research paved the way for today's computer networks.

*(Packet switching is the breaking down of data into datagrams or packets that are labeled to indicate the origin and the destination of the information and the forwarding of these packets from one computer to another computer until the information arrives at its final destination computer. was crucial to the realization of a computer network. If packets are lost at any given point, the message can be resent by the originator.)*

### *The Creation of ARPANET*

In July 1968, ARPA's Information Processing Techniques Office (IPTO) released a so-called "Request for Quotation" for a communication system to connect together a few geographically dispersed computers over a shared network. This network was to become ARPANET. Bolt Beranek and Newman (BBN) was awarded this contract.

ARPANET began in the fall of 1969 with the successful linking of four computers known as "IMPS" or "Interface Message Processors", which were located at the University of California at Los Angeles,, SRI (in Stanford), University of California at Santa Barbara, and the University of Utah.

***(Continued on page 3)***

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NetTeach News

## A NOTE FROM THE EDITOR

# Coming to Age In An Imperfect World

*Anyone who can read a newspaper online or off-line is aware that Cyberspace has its problems such as child pornography, viruses, hackers and con artists, stalkers and potential child molesters and rapists. Of course, even people who are not connected to computer networks face these same societal menaces, every day, in New York City and in Boise , Idaho; in Hong Kong and in Galway Bay, Ireland. The reality, online and off-line, is the world is a very imperfect place .*

*I am the mother of a twelve plus year old girl. In 6 months she will turn thirteen and that is a significant milestone for her and for me. For her, it will mark a new stage in her journey to adulthood, and to me it will mark a time when I must yield to her more independence and by so doing expose her to the imperfect world that heretofore I have tried so hard to shelter her from. In fact, I realize that at earlier ages, I have let her test her wings and step out "alone" into the world without me at her side, although I was usually an arms length behind, hiding behind some tree. She is already demanding that I give more slack to her reigns and I know the day is inevitable when at last I will have to release those reigns and send out into this imperfect world my most precious gift.*

*It would be so unfair of me to deny her greater freedom because I fear a world, neither I,her father, she, or anyone can ever control. My mother gave me freedom and indeed more at an earlier age but then again the times were decidedly different or so it seems.. Nonetheless, in six years, hopefully, she will graduate from high school and set off for college away from her father and me, and will have to make her own decisions and protect herself.*

*My husband and I can only hope that we, and the other adults that have also nurtured her, have equipped her with the tools she needs not only to survive but to prosper in the imperfect world we all live in. I don't want her to be afraid of that world and to lock herself away in some room and experience life in a closet. I want her to be able to go out into the world and experience the excitement and joy that I have as a young adult and now as a middle-aged person.*

*When I think of the challenges I face as a parent of an adolescent, I think of the challenges society now faces as the architects of an "Internet Coming to Age". In our desire to protect our children and ourselves, we may think we can "control" the world by restricting the growth and limiting access to the Internet but in fact I suggest this is an illusion at best, and may likely result in depriving our children and ourselves with something that can help us to lead a more interesting and full life.*

*We can try to impose severe regulations on the use of computer networks by creating new and better firewalls, caching devices, or limiting access of certain user populations. We can try to keep it as it was — the playground for a few— or as a playground for "adults-only". By so doing, we must recognize that we would make it less democratic and less open, and not necessarily more safe.*

*We need to recognize special vulnerability and deal with that in the way any parent or adult does every day with their children. Younger children do need more protection than adolescents and we need to understand that this means the same in Cyberspace as it does in the real world. As irresponsible as it would be for me to leave a six year old by his or herself in my home for two or three hours, it would be foolish for me to leave that age child alone on a computer or in front of a tv set for that length of time. Parents and teachers need to be actively involved with their children in their learning, in their friendships, in their entertainment, and in their dreams, and above all in their inevitable journey to independence.*

*There are times when I wish I had some magic wand that I could use to make the world a safer place for my children, and with a turn of my wand make all the bad people in this world disappear but such a magic wand unfortunately does not exist. We may believe that we do in fact have magic wands that can make cyberspace safe but in fact cyberspace will always be as safe and as unsafe as the streets of New York City and the streets of Boise, Idaho.*

*It is important that we don't deny our children the freedom they deserve and need to grow and to learn about life and the world they must live in. At appropriate periods in their lives we, their parents, need to be mature enough to recognize we need to give our children some slack. We need to accept the fact that we can 't control the virtual world or the real world but that we and they can lead productive lives and with street sense and common sense lead relatively safe lives.*

*Parents and Teachers Teach Your Children Well — There are evil people in the world who will try to harm them and exploit them even in the name of advertising. However, there are also people in the world and in cyberspace who will genuinely be interested in helping them and providing them with the benefit of their knowledge and life experiences. Teach them not to be cyberspatial cripples nor cyberspatial innocents, teach them to be wise cyberspatial travellers and tell them to have some good times , learn much, and have a full and productive life and always remember they are loved.*

Editor: Kathy Rutkowski
Contributing Editor: Stephanie Stevenson

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## Research on Core Protocols

The next few years in the development of ARPANET were spent developing core protocols. The first such protocol developed was known as the *Network Control Protocol* or *NCP*. This protocol supported a symmetric host-to-host communications that is the connection of host machines running on the same network.

The designers of ARPANET realized the need to create a protocol or protocols that supported the connection not only of computers to computers on the same network, but also the interconnection of different computer networks, now known as *internetworking*. ARPA assigned SRI (The Stanford Research Center) with the task of designing a set of protocols that would allow multiple computer networks to be interconnected together to enable various tasks.

During 1973-1978 a team of researchers headed up by Vinton Cerf at SRI and Robert Kahn of ARPA developed TCP/IP (Transmission Control Protocol and Internet Protocol) which as a suite supported the interoperability and interconnection of diverse computer networks. TCP/IP became the core Internet protocol and in 1983 replaced NCP entirely.

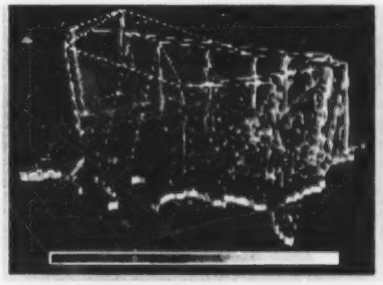
By the mid-1970s, ARPANET had become fully operational and the US Department of Defense computer network. On July 1, 1975, the responsibility for operational management of ARPANET was transferred to the US Defense Communications Agency (now known as the Defense Information Systems Agency).

## *The Development of Ethernet*

Also in the 1970s, ARPA sponsored further research into the applications of packet switching technologies. This included extending packet switching to ships at sea and ground mobile units and the use of radio for packet switching.

Ethernet was created during the course of research into the use of radio for packet switching, and it was found that coaxial cable could support the movement of data at extremely fast rates of speed.

The development of ethernet was crucial to the growth of local area computer networks.



A Visualization Study of inboud traffic measure in billions of bytes on the NSFNET T1 backbone for Septemebr 1991. 100 billion bytes are depicted here. The data was collected by Merit Network, Inc. (See URL: http://www.ncsa.uiuc.edu/CMS/DigLib/text/technology/Visualization-Study-NSFNET-Cox.html

## *The Division of ARPANET*

In the early 1980s, the ARPANET was divided into: MILNET and ARPANET. MILNET was to serve the needs of the military and ARPANET to support the advanced research component. The Department of Defense continued to support both networks.

## *The IETF*

In January 1986, the Internet Engineering Task Force or IETF was created to serve as a forum for technical coordination by contractors for DARPA working on ARPANET, US Defense Data Network (DDN), and the Internet core gateway system.

The IETF evolved into an open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and its operation. This group continues to establish the engineering protocols for the operation of the Internet.

## The Creation of the NSFNET Backbone

By the mid-1980s, the US National Science Foundation commonly known as the NSF was interested in ARPANET and in particular was interested in developing a major network backbone that could link together researchers at the Supercomputing Centers. In the late 1980s, NSF began to create what became known as the NSFNET.

In 1990, the Department of Defense disbanded the ARPANET and it was replaced by the NSFNET backbone.

## *The Legacy of US DOD*

Dr. Vint Cerf, who together with Robert Kahn is the co-inventor of TCP/IP, in a speech made early this year stated,

*The roles of ARPA and the Defense Communications Agency were critical both in supplying sustained funding for implementing the protocols on various computers and operating systems and for the persistent and determined application of the new protocols to real needs.* ❶

The US Department of Defense played a fundamental role in the creation of ARPANET and laid the foundation for NSFNET and the current Internet.

REFERENCES

❶ *Computer Networking: Global Infrastructure for the 21st Century* by Vinton Cerf, Copyright 1995 by Vint Cerf and the Computing Research Association. Found at URL: http://www.cs.washington.edu/homes/lazowska/cra/networks.html

*Internet System Handbook* by Daniel C. Lynch and Marshall T. Rose, 1993, Addison-Wesley Publishing Co., ISBN 0-201-56741-5

*Internetworking with TCP/IP, Volume I, Principles, Protocols, and Architecture* by Douglas E. Comer, 1991, Prentice-Hall, Inc., ISBN 0-13-468505-9

*COMING NEXT — THE NSF*
*Creating An Internet for All Learners*



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NetTeach News

FOR NETTEACHERS

# ONLINE INTERNET OPPORTUNITIES FOR EDUCATORS

## by Stephanie Stevenson

### ONLINE TRAINING

MAKE THE LINK! workshop

(World Wide Web For Everyone)

*Make the Link Workshop (World Wide Web for Everyone)* is an eight week distance-learning workshop conducted entirely using e-mail. It introduces the beginner to the World Wide Web (WWW), the Internet's distributed hypermedia information system, as well as enhances the skills of the somewhat more experienced user.

The workshop is lead by Thomas P. Copley, Ph.D., who is a pioneer in the use of the Internet for training. Dr. Copley is one of the founders of the Electronic University in San Francisco, and is an experienced instructor of distance learning course via networks. He has taught the highly popular Gopher-it Workshop, an e-mail course on the Internet gopher for more than one year.

*The Make the Link* Workshop covers such areas as:

- How to gain access to the WWW, including information on setting up a direct TCP/IP connection to the Internet (SLIP/CSLIP/PPP)
- How to link to specific Web resources using Uniform Resource Locators (URLs). This includes how to construct URLs for various kinds of resources, such as WWW, gopher, FTP, telnet, etc.
- To distinguish between various kinds of WWW browsers, including Netscape Navigator, NCSA Mosaic, Arena, Agora, Lynx, etc. and the strengths and weaknesses of each.
- How to navigate Webspace and use various searching tools such as Wandex, CMU Lycos, WebCrawler, InfoSeek, and others.
- To make WWW bookmarks and organize your bookmarks with Hypertext Markup Language (HTML).
- How to effectively and efficiently design your own home page with HTML and install it on a server.
- The principles of good home page design, in order to project a favorable image for you and/or your employer or business.
- Advantages and disadvantages of HTML editors such as HoTMetaL and HTML Assistant and related utilities.
- How to build interest in your home page through USENET Newsgroups, mailing lists, IRC, BBSs and MUDs.

This Fall, three workshops will be held during the following dates:

Session II..... Sept. 25 - Nov. 19
Session III... Oct 16 - Dec. 3
Session IV... Oct. 30 - Dec. 22

The cost of the workshop is $20 US.

For more information, send an e-mail message to the address:

**majordomo@arlington.com**

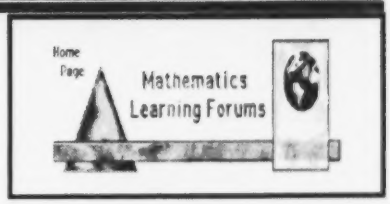
and in the body of the message, include:

subscribe links2
*(or links 3 or links 4 depending on which session you are interested in)*

You will automatically be placed on the mailing list for more information about the workshop, and will receive an acknowledgment with specific instructions about registration.

To participate in the workshop you only need access to e-mail. However, it is very desirable to actually use a WWW browser.

See URL: http://www.crl.com/~gorgon/links.html




In May 1994, the Bank Street College of Education offered the first Mathematics Learning Forums pilot courses to educators across the United States. The success was overwhelming and these online seminars have continued.

The courses are intended to help promote mathematics reform and the standards of the National Council of Teachers of Mathematics (NCTM).

Designed for teachers in grades K-8, the forums are hosted by a graduate faculty member of Bank Street College and focus on the "how" of mathematics instruction, providing on-going support to teachers as they implement reform in their own classrooms.

During each eight-week forum teachers engage in online discussion with colleagues as they plan, revise and implement activities with their students, view videotapes of students and teachers in a range of school settings, and discuss topic-relevant readings.

Each forum is limited to twelve participants, making in depth discussion around mathematical content, pedagogy and classroom teaching strategies possible.

An Internet email account is required to participate in the forums.

This year the fall session will be held from October 2-November 30, 1995; the Winter session

*(Continued on next page)*



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# ONLINE OPPORTUNITIES CONTINUED

from January 8-March 8, 1996; the Spring Session from March 18- May 17, 1996.

A full description of the courses can be found at URL:

http://www.edc.org/CCT/mlf/fullcourses.html

For more information about **the Mathematics Learning Forums** visit URL:
http://www.edc.org/CCT/mlf/background.html

or send e-mail to:
cct@edc.org

or call (tel) + 1-212-807-4200.

This project is developed with support from the Annenberg/CPB Math and Science Project, and is a collaboration of Bank Street College of Education and the Education Development Center.

For more information about **The Bank Street College** visit URL:

http://www.edc.org/CCT/mlf/bankst.html

For more information about **the Annenberg/CPB Math and Science Project,** see URL:

http://www.cpb.org/annenberg/k12mathsci/home.html

(**Editor's Note—*These course are generally reimbursable through district inservice credit and/or tuition reimbursement programs)*

## PUBLISHING OPPORTUNITIES

### The Teachers Network Seeks Submissions

IMPACT II--The Teachers Network is soliciting submissions to "the Teachers Guide to Cyberspace"—an Internet Guide intended for all teachers at all levels and subject areas.

The Teachers Network is a nonprofit organizationthat supports innovative teachers who exemplifyprofessionalism, independence, creativity, and leadership inour nation's schools.

The Guide will be written for teachers by teachers. The book will come with an interactive floppy disk that will enable teachers to meet teachers across the country who have used computer-based technologies to develop new ways of teaching, innovative curriculum and classroom management techniques, and researching and networking skills in their communities and around the world.

**Contributors Will Receive Up to $200 and a free copy of the book and disk.

For more information, contact:

IMPACT II
285 West Broadway
New York, NY 10013
E-Mail: impactii@aol.com
Phone: +1 (212) 966-5582;
Fax: +1 (212) 941-1787

Funds for "The Teachers Guide to Cyberspace" have been provided by a grant from AMERITECH.

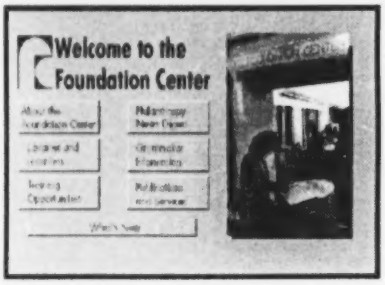
## ONLINE INFORMATION ON GRANTS

### 2. The Foundations' Center

The main page of The Foundation Center is located at URL:

**http://fdncenter.org/**

Information on grantmaking can be found by going directly to URL:




**The Foundation Center**
**http://fdncenter.org/**

**http://fdncenter.org/grantmaker/contents.html**

Non-Profit Organizations On the Internet are listed at URL:
http://fdncenter.org/grantmaker/nonp.html

### 2. GrantWeb

GrantWeb is an excellent starting point for accessing grant and grant-related information on the Internet. It is located at URL:

**http://infoserv.rttonet.psu.edu/gweb.htm**

### 3. American Communications Association Grants and Fellowship Online Index

ACE has put together a Good Index. This is found at URL::
http://www.uark.edu/depts/comminfo/www/grants.html

### 4. Resources for Grantwriters Online

Eva Lyford has put together an excellent web page on the online resources available to grantwriters. This is a very thoughtfully laid out page with good commentary on links. See URL:
http://www.umich.edu/~trinket/Resources_for_Grant.html



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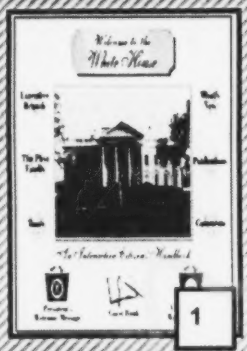
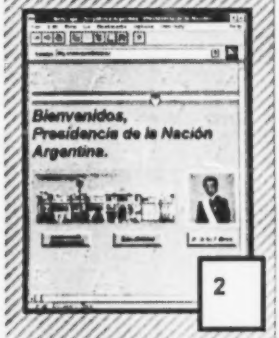
# PRESIDENTS AND PRIME MINISTERS




## ❶THE WHITE HOUSE
http://www.whitehouse.gov/

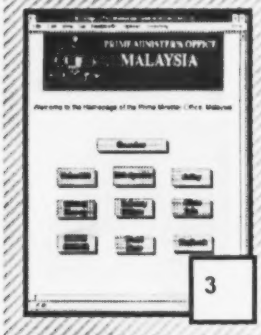
The White House page provides information on the US President Clinton and his family, on the Vice President, access to an online tour of the White House, links to US Executive Agencies and Departments, access to daily press releases and major executive documents that have been released to the public, and an opportunity for any and all visitors to sign a guest book.




## ❷PRESIDENCIA DE LA NACION ARGENTINA

**(The President of Argentina)**
http //www presidencia ar/

This page provides information on Dr. Carlos S. Menem, the President of Argentina and provides links to key administrative departments having an online presence, and links to interesting information on past Argentine Presidents and access to a vast photo archive.




## ❸THE PRIME MINISTER OF MALAYSIA
http://smpke.jpm.my:1025/

This web site provides links to the Prime Minister key speeches, other important policy documents, information about Vision 2020 — a statement of strategic growth policies, and links to the Cabinet and to Embassy Offices.

## ❹THE PRIME MINISTER OF AUSTRALIA
http://gov info.au/pm/pmhp html

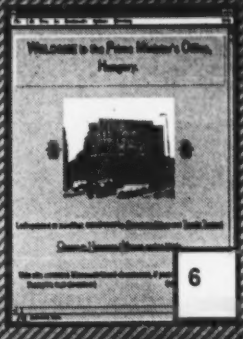
Australian Prime Minister Paul Keating's Page provides biographic information about the Prime Minister, access to current speeches and announcements, news releases, and the Prime Minister's Diary of current events in under construction.

## ❺THE JAPANESE PRIME MINISTER'S OFFICIAL RESIDENCE
http://www.kantei.go.jp:80/index.html

The Prime Minister's Residence Page provides links to other Japanese government departments and agencies with World Wide Web sites. There are also links to all sorts of useful information on Japan and to key information on the New Economic Plan and recent speeches by the Prime Minister.

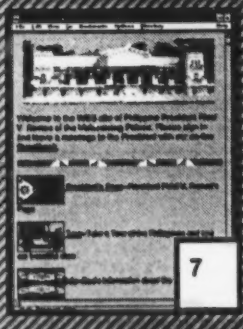
## ❻THE PRIME MINISTER OF HUNGARY, Gyula Horn
http://www.meh.hu/default.htm

This page contains important offical statements, short CVS of the Members of the Hungarian government, links to publications og the Ministry of Foreign Affairs, a short walk through the Hungarian Parliament building, and links to the Hungarian Home Page at: http://www.fsz.bme.hu/hungary/homepage.html (English and Hungarian Versions)



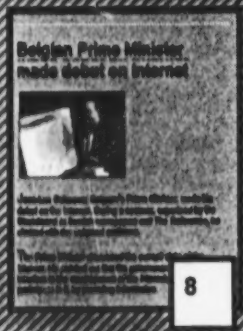

## ❼PRESIDENT FIDEL V. RAMOS OF THE PHILIPPINES
http://www.igcom.net/President/

This site provides allows you to take a cyberspatial tour of the Philippines, access basic information about the Country, and link to related sites.



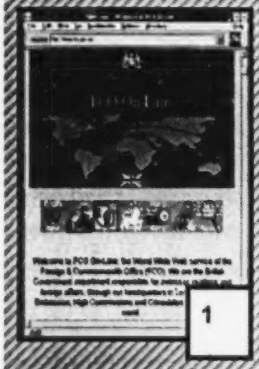

## ❽THE PRIME MINISTER OF BELGIUM ON THE NETS
http://www.aws.com/infopage.html

This is not an official page but an informational page put up by Guy Puttemans that contains parts of an interview following the Prime Ministers participation in an live Internet session.



NetTeach News

# GOVERNMENTS ON THE NETS

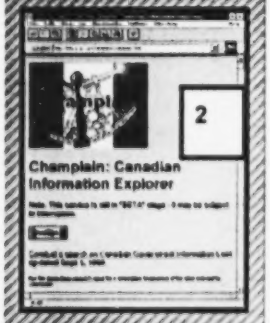


1

### ❶The British Foreign and Commonwealth Office (FCO) Online Server

http://www.fco.gov.uk/

THE FCO Online Server provides a wealth of information about British foreign policy and current affairs. Information onf the server can be accessed using the CCTA central UK government server's search engine. This facility searches all recognized UK government documents on the worldwide web with some restrictions. There is also access to the What's New this month page, travel advisonotices, biographies and responsibilities of the FCO Ministers, and Background Briefs.




2

### ❷CHAMPLAIN

http://info.ic.gc.ca/champlain/champlain.html

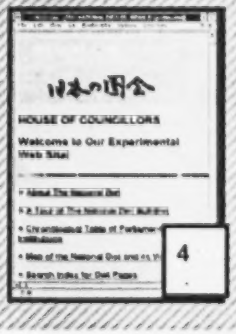
Champlain: Canadian Information Explorer is a service that supports searches for Canadian Information on the Internet. Champlain contains information about all known Canadian Government sites (Federal, Provincial and Municipal) and Canadian Legal Information. The Champlain is built around the Harvest search engine.

3

### ❸The Parliament of Australia Internet Trial-

http://www.aph.gov.au/library/trialhom.html

This service is offered as a trial to provide electronic access to a parliamentary materials such as: Notices of both the House of Representatives and the Senate; House Votes and Proceedings and the Senate Journals, access to the official weekly version of the Hansard, as well as biographical data from the Parliamentary Handbook.




4

### ❹The National Diet of Japan

http://fuji.stanford.edu/diet/diet1.html

This experimental Web site of the Japanese National Diet is maintained by the Stanford University and provides among other things information about the National Diet, and a search index for diet pages.

### ❺Republic of Poland

http://www.urm.gov.pl/

The Polish Government Press Office on this site provides links to Polish Ministries Online such as the Ministry of Foreign Affairs, The Ministry of Privatization, the Ministry of Agriculture and Food Economy, and the National Energy Conservation Agency. One can also access information from the Polish Press Agency and the Archives of the Government Press Office. Both a Polish and English text version.

RZECZPOSPOLITA POLSKA
REPUBLIC OF POLAND
Witamy w serwisie informacyjnym WWW Urzędu Rady Ministrów.
Można wybrać polską lub angielskojęzyczną wersję.

5

### ❻Stortinget Live on the Internet

http://sauce.uio.no/Stortinget/

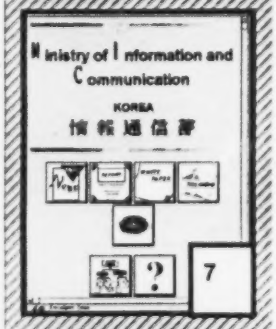
Speeches from the Norwegian parliament - Stortinget — are available in real time over the Internet. UNINETT A/S and the University of Oslo are arranging the transmission on a one year trial basis. For links to ODIN, the Official Norwegian Government Page, see RL http://odin.dep.no/

6

### ❼Korea's Ministry of Information and Communication

http://www.mic.go.kr/

MIC, The Ministry of Information and Communication for Korea, provides links here to current news (check out the 1995 Action Plan for the Information Highway), Reports (The Vision of Telecommunications in Korea), White Paper on Information and Communications, Communications and Information Laws and Regulations, and and Information on APEC. (

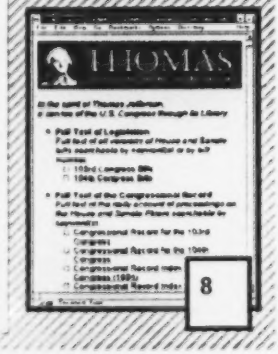



7

### ❽THOMAS — US Legislative Information on the Internet

http://www.aph.gov.au/library/trialhom.html

Access to US Bills, full text of daily account or proceedings on the House and Senate Floors searchable by keywords, links to Constitution, How Laws Are Made, House and Senate Gophers.




8

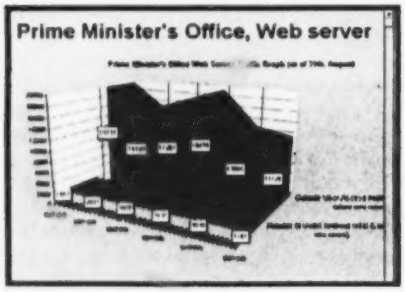
NetTeach News

# GOVERNMENTS GO ONLINE

Governments at all levels (federal, provincial and local) are going online. Even governments with limited resources and having a limited citizenry online have joined the Internet Club. Evidently, they believe the Internet has a legitimate role to play in the process of information dissemination and communications.

Government use of the Internet and the World Wide Web more specifically is still in an experimental stage but already the statistics are revealing and the numbers of these web, gopher and ftp sites are significantly growing and the frequency rate of visits to these sites is significant and increasing.

Here we will briefly consider how governments are openly using the Internet, what kinds of information they are sharing, and what value this information has for students, teachers, researchers and all citizens.




**Prime Minister of Hungary Web Site Statistics**
http://www.meh.hu/misc/statistics/husage.htm

## *How Governments Use The Internet*

Governments are exploring how the Internet can facilitate several important government functions:

- Provide citizens with access to valuable public information on a timely and relevant basis
- Provide learners and students with a wealth of information held by government organizations and organizations funded by public money
- Solicit the opinions of citizens on a variety of policy critical issues
- Provide non-citizens with useful information about the country, the government, and the society.

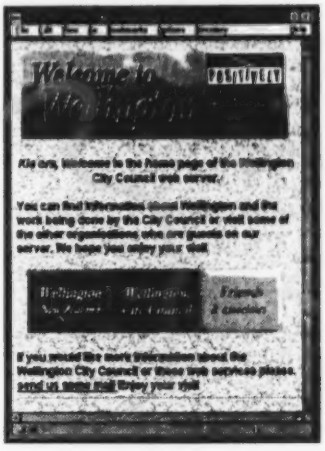
### *Disseminate Information on Government Action*

One of the functions of a democratic government is to keep citizens informed since in fact citizens are the sovereign power. Indeed, all the democratic governments have evolved structures of government dedicated to the dissemination of information regarding the decisions of government and other significant information that is important to the welfare of its citizens. The cost of providing citizens with access to the piles of paper generated in the executive, legislative, and judicial branches of government would be prohibitive. However, the electronic dissemination of such information is much more feasible and affordable.

Most of the major democratic nations are experimenting with releases of such valuable information. The United States, Canada, Australia, New Zealand and Japan all have experimental sites that are providing citizens with quick and timely access to legislative bills, hearings, executive reports, and supreme court decisions.

Even provincial, state and local governments are using electronic networks to disseminate their executive and legislative works.

The Wellington, New Zealand City Council, for example, is providing access to Council databases such as the Community Service Directory, and access to the archives of the Minutes of the Council Meetings. (See Graphic Below)



**The Wellington City Council Page**
http://www.wcc.govt.nz/

The US Commonwealth of Massachustetts has created MAGNet which stands for Massachusetts Access to Government Network. Magnet helps online citizens access information about Massachustetts Government at work in the State Executive, Judiciary and and Legislative offices., publications supplied by the Commonwealth on such matters as The Governor's Budget recommendations for Fiscal Year 1996, Educational Reform Grands and Local Aid Data, and the Massachusetts Internet Job Bank. (See Next Page, Top Insert)

*(Continued on next page)*



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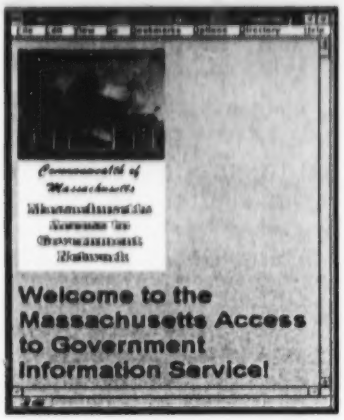
NetTeach News

# INFORMATION DISSEMINATION

# TO PROVIDE CITIZENS WITH KNOWLEDGE




**MAGNet**
**http://www.magnet.state.ma.us/**

### *Disseminate Government Research and Policy Studies*

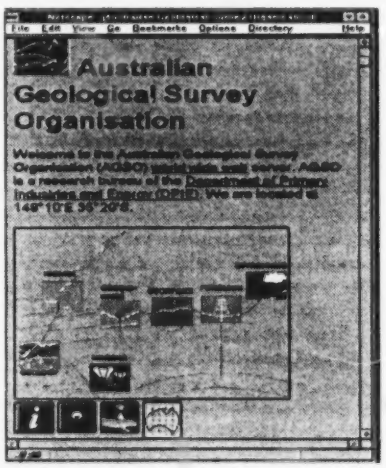
Governments are also using the Internet to provide citizens, learners and researchers with access to significant information and knowledge acquired and generated by government agencies and departments. Some of the information is already available to the public in print version but now citizens can more easily access bibliographic indexes and retrieve electronic versions of the reports as well as, in some cases, order the hard copy versions.

The Geological Survey Offices such as the US Geological Survey, AUSLIG (the Australian Surveying and Land Information Group), and the Geological Survey of Canada are providing access to excellent imagery, extensive data bases, and finished reporting on a variety of subjects such as hydrology, cartography, and seismology,.

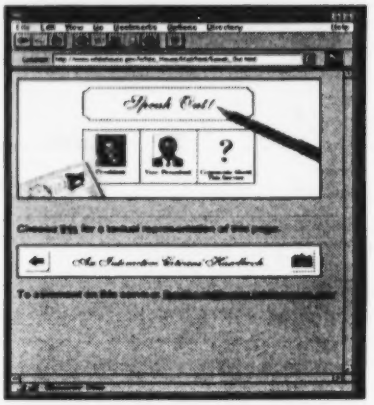
The US Central Intelligence Agency provides online access to a wealth of information found in their publication to the World Factbook. The US Department of Education and the Australian Department of Employment, Education and Training provide access to reports on a variety of issues related to learning and teaching. The Commercial Offices and divisions such as the US Department of Commerce and the Argentina Ministry of Economy and Public Works provide access to national economic data including statistics on national economic performance as well as reports on the budget and other important economic initiatives and plans.

### *Solicit the Views of the Citizenry*

Many of the governments are also experimenting with electronic democracy. The Clinton Administration was perhaps the first to explore the Electronic Town Hall and is using listservs and web forms to solicit the opinions of the public on a variety of subjects.




**The Australian Geological Survey Organization (AGSO)** provides access to wonderful imagery, extensive databases, and relevant studies. See
http://www.agso.gov.au/




**An Interactive Citizens' Handbook**
**Allows US Citizens to send messages to President Flinton and Vice President Gore**
http://www.whitehouse.gov/White_House/Mail/html/Speak_Out.htmlstate.ma.us/

### *Provide Information About the Nation, the Government, and the Citizens*

Governments are also providing information about the basic structure of government, the consitutions, the political and geographic regions of the country, and other information that can be used by international travellers, businessmen, researchers as well as nationals.

Many of the Embassies in major capitals of the world are online providing a vast amount of cultural. commercial, and consular information. The Belgium Embassy in Washington D.C. has a web site that provides students interested in study in Belgium with useful information and links to universities in the Country with exchange programs. This month there was a notice regarding two missing children from Belgium.

*(Continued on next page, See How To Use Material With Students)*



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NetTeach News

Guide for Educators

# A NEW SOURCE FOR TEACHERS & LEARNERS

**The French Constitution** , (English and French Versions Available), is located at http://www.ensmp.fr/~scherer/adminet/constitution.html

Some other Constitutions Online include:

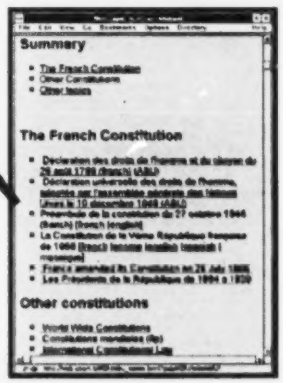
**The Irish Constitution**(Gaelic and English Version Available) http://www.maths.tcd.ie/pub/Constitution/index.html

**The New Zealand Constitution** ( English) http://www.govt.nz/constitn.html

**The Constitution of Japan** (English and Japanese Versions Available) http://www.ntt.jp/japan/constitution/

**The Constitution of Argentina** (Spanish Only)http://www.secyt.gov.ar/arg/cons.html

**The US Constitution** (English Only) http://www.law.cornell.edu/constitution/constitution.overview.html




## *Some Cool Government Sites*

**Admi-Net of the Republic of France**(Wonderful Starting Point for Information about France and the Government of France) (French and English Versions); http://www.ensmp.fr/~scherer/adminet/

**RMJN** (The WWW Server of the Ministry of Justice of Argentina) provides links to a wealth of information on Argentina. (English and Spanish Version) ; URL: http://www.secyt.gov.ar/

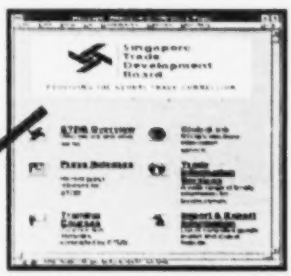
**Japanese Ministry of Foreign Affairs** provides information on Japanese foreign policy and information of educational and cultural exchanges. http://www.nttls.co.jp/infomofa/

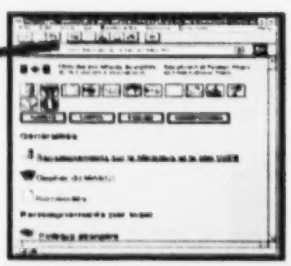
**TDB—The Singapore Trade and Development BoardWeb Site** provides a wealth of trade and economic information ; http://www.tdb.gov.sg/ Also worth a visit is the **Singapore Ministry of Education Page at** http://www.moe.ac.sg/

**Australian Government Home Page** (A Super Starting Place to Government Agencies and Departments) ; http://gov.info.au/

**Canadian Department of Foreign Affairs and International Trade Server** (English and French) a source of excellent information on Canadian Foreign Policy ; http://www.dfait-maeci.gc.ca/

**US Government Budget 1996** found at: gopher://sunny.stat-usa.gov/11/BudgetFY96





*The vast amount of information now available online can be utilized by teachers and their students at virtually all levels of the education process and indeed some of this information is already a treasure trove for professional researchers and analyst.*

*The imagery, databases, and finished reports can and should become a known, used, and well cited source for independent student researchers investigating current affairs, international studies, area studies, diplomacy, technological and scientific research, health studies, and other critical social and economic areas.*

*This material can also be effectively used by teachers as new sources of curriculum as well as supplementary materials. Some of these databases can be used to reinforce mathematical skills using current material that perhaps might be more engaging to students. Students of foreign languages can be given materials to translate that are current and timely. Students of government and international issues can be asked to draw comparisons between the various constitutions online, economic plans, and the structure of different governments by touring the various government webs. These materials can be the source of some interesting discussions and debates on current affairs, diplomacy, and mord general the decision-making process. Students of journalism have endless opportunities to practice their craft by sifting through the historical and current material now available online.*

*Many of the governments online are governments that are strongly supportive of schools and students using the Internet and offer various programs and even online collaborative projects for teachers and students that are revealed in these webs at various places, most typically in the Ministries and Departments of Education Servers.*



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# Around-the-Web

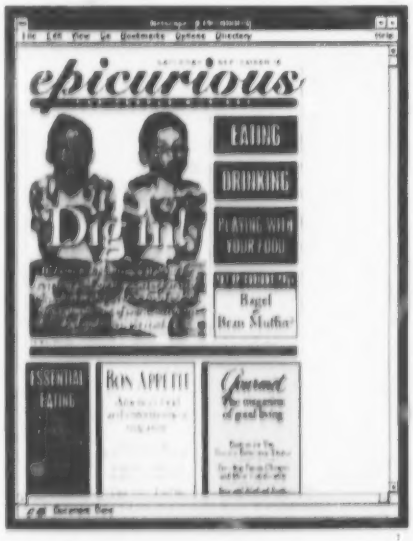
CNN Interactive
Contents
Search
Welcome Page
Help
September 17, 1995 – updated 4:15 p.m. EDT (2015 GMT)
Relief supplies head for Virgin Islands
Hurricane Marilyn leaves trail of suffering
September 17, 1995
Military cargo planes are streaming into the Virgin Islands carrying relief workers and supplies to help relieve the suffering left in the wake of Hurricane Marilyn. The storm whipped through the islands Saturday, killing at least three people and leaving a hundred missing or injured before sweeping into the Atlantic.
Full Story

## CNN INTERACTIVE

A wealth of information here for the current affairs and news curious. This is a super site for students, researchers, and for those interested in accessing the vast CNN news network, CNN has made an arrangement with Lexis-Nexis Information Service that will allows all CNN Web users to access stories from newspapers and magazines from around the world.

This gets the NetTeach News. REALLY SUPER SITE AWARD.

Check this one out! URL:http://www.cnn.com/




## THE EPICURIOUS PAGE

is definitely not the page for someone on a diet but for the food curious this is the piece de resistance.

Check it out and indulge!

URL http://www.epicurious.com/epicurious/home.html

This is the International Kids' Space.
in this space. Find their secrets!
to make sure if your sent-address was correct
Kids' Space is

## THE INTERNATIONAL KIDS PLACE

This is a G-rated page for young children and their parents to enjoy together.

Kids can share their stories, their art, and their music, and ask one another questions.

This can be viewed in Japanese and English.

This is the page to start off those young internauts.

You can find it at URL: http://plaza.interport.net:80/kids-space/



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NetTeach News

NetProjects

# OCEANA — A VIRUAL REALITY LEARNING TRIP

**OCEANA HOME PAGE**
**URL:http://vedana.sdsc.edu/COLL/Oceana/oceana.html**

SDSC (the San Diego Supercomputer Center) recently announced that it will provide permanent support to the highly acclaimed Oceana, a new and exciting educational tool for the K-12 internetworking community..

Children with knowledge of a simple programming language can visit and transform the virtual planet of "Oceana" and experience global travel within a text-based virtual reality (TBVR) world of islands created and administered by their peers. Oceana "inhabitants" are encouraged to collaborate on the creation of these new worlds with limited or no guidance from adults.

There are currently 35 islands under construction and, through this creative collaborative process, participants learn about government, trade, and economic systems, cultural boundaries, traditions, and customs, and how to use virtual reality as a building block to create virtual societies.

Oceana is run on a software platform called MUSE, which stands for **M**ulti-**U**ser **Si**mulated **E**nvironment. MUSEs are multi-user, TBVR environments accessible via the Internet. They follow in the tradition of the popular text-based adventure games but support real-time interaction among many participants who collaborate to build their own world.

## *A Muse Environment*

MUSE offers many educational opportunities including, for example, critical thinking, game-playing, debate, collaboration with others from different cultural and social backgrounds; and creativity.

Students of all ages and of varying levels of technical expertise can benefit from the MUSE. Students do not need a high degree of technical tolerance or ability. The interfaces are user-friendly and the programming language used is easily mastered by even students as young as eight years old.

## *MUSENET*

OceanaMUSE is collaborating with the MuseNet project. MuseNet, the Multi-User Science Education Network, is a loose confederation of educational MUSEs and a collection of Internet host computers, which support access to and administration of the MuseNet system.

Barry Kort, the consulting scientist for BBN's K12 MuseNet Project describes MuseNet as " an unfunded K12 outreach program for informal science education, operating on donated, surplus, salvaged, and rebuilt computers and is operated entirely by volunteer staff members." MuseNet's main goal is to provide access to online educational worlds such as Oceana for as many students and adults as possible.

OceanaMUSE takes place on the planet of Oceana, named for its vast oceans and numerous islands. Users are given the opportunity to rule an island, construct a stable domestic system, and participate in international affairs. OceanaMUSE is operated and supported by "Oceana Admirals" Terry Ford, Mark Eisenstat, Peter McArthur, and Jason Hula, who range in age from 14 to 18 years old and live in Canada and the United States.

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# OCEANA — A VIRUAL REALITY LEARNING TRIP

To visit OceanaMUSE, type "telnet oceana.sdsc.edu 4201" from the UNIX prompt.) .

## *The History of Oceana*

Terry Ford and Mark Eisenstat, 17-year-old high school students from Ontario, Canada, created OceanaMUSE nearly two years ago. Oceana began when Ford created a virtual "island" on another MUSE, TimeMUSE. Oceania was so well-received that Ford crafted a proposal with Eisenstat for a new MUSE, one that was to be based on Ford's original concept of Oceana, emphasizing the presence of an educational theme within an entertaining setting. Eisenstat worked on hardware, and Ford worked to develop the software to manage/partition islands. With the charter formed, Oceana opened for business..

The next challenge was to find a permanent site. With assistance from Hans-Werner Braun, SDSC senior staff scientist, Oceana has obtained a permanent site at SDSC on a donated DEC (Digital Equipment Corporation) Alpha machine.

## *Addressing Scaleability*

Oceana is rapidly growing in popularity and as more users join the

**The Mountains of Oceana**
**http://vedana.sdsc.edu/**
**COLL/Oceana/Images/**
**desertovlk3.gif**

**Cliffs of Oceana**
**http://vedana.sdsc.edu/**
**COLL/Oceana/Images/cliff3.gif**

MUSE system there are some inherent problems that need to be addressed, the most major being insufficient machine memory. SDSC will work with the Oceana administrators to find solutions that will benefit not just OCEANIA but other MUSES.. Terry Ford believes, "If we found a way to better handle 'objects,' it would be possible to have an almost limitless world. Users would not have to have limited building quotas."

SDSC's Braun, leader of the Applied Network Research (ANR) group--a group established to develop realistic models of today's complex network infrastructure--announced his group"plans to develop more sophisticated communication and relational channels to allow an object, such as a 'room,' to appear simultaneously on multiple servers. (See http://www.nlanr.net) People at various servers will be able to communicate within this virtual room. This model fosters social interaction across the individual 'world' (servers) while obscuring the geographic distribution of the participants." Discussions are under way to implement this multicasting capability across an environment like the MBONE (Multicast Bone), which facilitates multicasting by means of a virtual network overlaying the Internet infrastructure.

The San Diego Supercomputer Center, a national laboratory for computational science and engineering, is sponsored by the National Science Foundation, administered by General Atomics, and affiliated with the University of California at San Diego.

*For additional information on Oceana see,*

http://www.sdsc.edu

*or contact*

Ann Redelfs, SDSC, redelfs@sdsc.edu, 619-534-5032.

Mark Eisenstat, "Oceana Admiral," 613-596-4059, meisen@musenet.org

Terry Ford, "Oceana Admiral," 613-225-3487, aa429@freenet.carleton.ca

Hans-Werner Braun, SDSC, 619-534-5035, hwb@upeksa.sdsc.edu

Barry Kort, BBN, 617-873-2358, bkort@musenet.org

For more information on MUSES see:

❶OCEANA HOME PAGE
URL:http://vedana.sdsc.edu/COLL/Oceana/oceana.html

❷MUSENET WWW Server
http://www.musenet.org/

❸ MUSER Home Page Extravaganza
http://www.umich.edu/~lpackard/Muse/musers.html

❹ MUSENET GOPHER
gopher musenet.org/

❺ CAMP MARIMUSE Gopher
gopher //pcef.pc.maricopa.edu/



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NetTeach News

Knowledge-Building Collaborations

# Electronic Emissary" Service Available

Professor Judi Harris of the University of Texas at Austin, author of *Way of the Ferret—Finding Educational Resources Online* and one of the foremost Internet teacher's teacher, has launched the Electronic Emissary Service. This is a *matching service* that helps teachers with access to the Internet locate online experts in different disciplines, for purposes of setting up learning collaboratories involving the teachers, their students, and the experts.

### *Past Collaborations*

Examples of last year's collaborations involved:

- Fourth grade students in Fort Worth, Texas and middle school students in Menomonee Falls, Wisconsin communicated with an astronomer and planetarium coordinator from Louisville, Kentucky about the origin of the universe, the birth, life, and death of stars, constellations, the solar system, black holes, the use of the sun as an energy source, the moon, Mars, and current auroral activity.
- Ninth grade students from San Angelo, Texas corresponded with an anthropologist from Los Angeles, California about civil rights, both as they could be explored in reference to the first Rodney King trial (that was taking place at the time of the exchange) and historically, by examining the struggle for African American rights during the late 1950's and early 1960's, with particular emphasis upon the contributions of Dr. Martin Luther King, Jr.
- Twelfth grade students in Atherton, California corresponded with a computer scientist from British Columbia about their individual projects in cosmology that dealt with physics beyond the solar system.

The number of teams (approximately 175) was limited only by the available support for the project; almost 300 subject matter volunteers have offered their services, and more teachers requested matches than the project's facilitators could support.

### *Requirements for Participation*

There are currently 60 "matches" available. You are invited to browse through our database of subject matter experts to see if there is one whom you would like to invite to correspond with you and the student(s) who would most benefit from the interaction.

There are several requirements for participation:

- You must have your *own* Internet account to participate in the project, or an account to which the students and you will have easy access for communication with the subject matter expert (SME).
- You must use ONLY this ONE account for ***all*** Emissary communication.
- You must be able to use e-mail for the project at *least* three times each week during the exchange period.
- You must be able to participate, with your students, in the exchange, during *this* semester (now through November 30, 1995).
- You must be willing to allow the coordinators and online facilitator assigned to your electronic team to read all of the messages that you and your students send to the SME. To allow this to happen, you must address all of your Emissary-related messages to the same Internet address that we create for your team, *not* to the SME's personal Internet address.
- You must be willing to electronically "sign" a consent form for your participation in the project, which your online facilitator will send you before communication with the SME can begin.
- More importantly), you must be willing to distribute, collect, and return consent forms for *all* students who will communicate with the SME, using the paper copies of the consent form and stamped, addressed envelope that we will provide to you.
- You must be willing to complete a short and confidential individual project evaluation form by December 8, 1995.
- You must be willing to collaborate with the SME to write and send us (by December 8, 1995) a short (approximately one page), jointly-written summary of how you structured the exchange, what techniques worked well, and what you would do differently next time if you were to do it again. This summary will have to be written in the week following the end of the exchange, and will be posted publicly on the Internet for others to read and use for their own organization of telecomputing projects.

### *How To Request A Match*

To get to our SME database:

1. Go to the system prompt in your Internet account.

2. Type: **telnet tapr.org** and press the <Enter> or <Return> key.

3. When you see: sys1 login: Type: ***teacher*** and press the <Enter> or <Return> key.

4. IMPORTANT: When you get to the main menu, **choose #1 first** , and read the additional information about participation in the project BEFORE you begin to browse in our database.

5. When you have read that information, return to the main menu and choose the option that will allow you to BROWSE the database. Have some scrap paper ready to write down the NUMBER of the SME whom you would like to request.

For those having trouble with the database program, please contact Greg Jones, the Emissary's system developer at: gjones@ tenet.edu . . For those who do not have Telnet facilities available from your Internet account, please send an e-mail note to Judi Harris at :<jbharris@tenet.edu> and request an electronic mail application.

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# THE GLOBAL KIOSK

## OCTOBER 1995

**24-27 October VI International Conference on Technology and Distance Education.** *San Jose, Costa Rica. Sponsored by NOVA Southeastern University and Universidad Estatal a Distancia. Keynote Speakers: Dr. Roberto Dobles, Minister of Science and Technology, Costa Rica; Dr. Michael Moore, Director of the American Center of Distance Education, Penn State. For information send mail to: NSU, FIschler Center for the Advancement of Education, 3301 College Ave, Fort Lauderdale, FL, , telp: +1 305-476-8969, fax: +1 305-423-1224, or e-mail: pujolsj@alpha.acasr.nova.edu*

**25-27 October WWWDEV conference** *in Fredericton, NB. Should prove to be a worthwhile meeting for those interested in developing world wide web pages. For information contact:*
*Rik Hall, Program Director - Distance Education and Off-Campus Services, University of New Brunswick - Continuing Education Centre, Duffie Drive - PO Box 4400, Fredericton, NB E3B 5A3, Tel: +1 (506) 453-4854 Fax + 1(506) 453-3572 , E-mail to Hall@UNB.CA*

**25-27 October ALASKA Communications Technology Conference '95** *in Juneau, Alaska. The goals of this conference are to educate Alaskans about using available communications technology, to discuss future communications technology needs in Alaska, and to demonstrate business opportunities available to Alaskans using communications technology.*
*For more information contact: Kari Westlund,Juneau Convention and Visitors Bureau,369 South Franklin, Suite 201*
*Juneau, Alaska 99801,Tel: +1 (907)586-1737 , Fax: + 1 (907)586-1449 , e-mail to: ALASKAJNU@AOL.COM*

**25-27 October Ninth Annual Technology & Learning Conference**, Inforum in Atlanta, GA. *Sponsored by the National School Boards Association's Institute for the Transfer of Technology to Education. For more information send mail to:National School Boards Association, Institute for the Transfer of Technology to Education, 1680 Duke Street, Alexandria, VA 22314-9973 or call: +1 800 950-6722.*

**26-29 October. AAHE 6th National Conference on School/College Collaboration.** *Renaissance Washington D.C. Hotel .. For information call Carol Stoel or Grace Moy at 202/293-6440 ext. 34 or ext. 15 or e-mail: cstoel@capcon.net*

**30 October- 1 November ONLINE 95 and Multimedia Schools** *The Palmer House Hilton, Chicago, IL For more information contact: Tasha Heinrichs, 462 Danbury Road, Wilton, Ct 06897-2126, or call: +1 203-761-1466.*

## NOVEMBER 1995

**30 November-3 December Tel Ed'95** *Broward County Convention Center, Fort Lauderdale, Florida. Sponsored by ISTE. For more information contact: Cathy Hutchins, Tel: +1 904-824-2955, Fax: +1 904-829-5958. e-mail <hutchic@mail.firn.edu>; Margaret Riel, Tel: +1 619-943-1314, Fax: +1 619-943-1314, and e-mail <mriel@weber.ucsd.edu>*

## DECEMBER 1995

**2 December 1995** ***First Annual Classroom Telecommunication Conference****, Pasadena Conference Center. Sponsored by the Association for Classroom Technologies (ACT/ CUE).Keynote address by Al Rgoers, Executive Director, Global Schoolnet Foundation. For more information send mail to:: C.T.C. P.O. Box 5546, Pasadena, CA 91117, e-mail to: <dkresse@cello.gina.calstate.edu> and call: +1 818-792-8546.*

**5-8 December I C C E 95, International Conference on Computers in Education** *Raffles City Convention Centre Singapore Sponsored by Association for the Advancement of Computing in Education Asia-Pacific Chapter (AACE APC) ICCE 95 will focus on a broad spectrum of inter-disciplinary research topics concerned with theories, technologies and practices of applying computers in education. For more information contact: ICCE 95/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, E-mail: AACE@virginia.edu; tel: +1 804-973-3987; Fax: + 1804-978-7449 ICCE 95/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, E-mail: AACE@virginia.edu; tel: +1 804-973-3987; Fax: + 1804-978-7449.*

## MARCH 1996

**4-6 March. Midwest Education & Technology Conference.** *Cervantes Convention Center at America's Center, St. Louis, Missouri. For more information write to: Conference Coordinator, 1460 Craig Road, St. Louis, MO 63146, or call +1 314-692-1250.*

**13-16 March. SITE 96, The 7th International Conference of the Society for Information Technology and Teacher Education.** *Phoenix, Arizona. For more information write to: SITE 96/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, or call +1-804-973-3987, or FAX: +1-804-978-7449, or send e-mail to: AACE@virginia.edu.*

**17-20 March. ICTE'96 Technology and Communications: Catalyst for Educational Change.** *New Orleans, Louisiana. For more information write contact: Telephone: +1-817-534-1220; Fax:+1-817-534-0096; E-mail: icte@icte.org; World Wide Web: http://www.onramp.net/~icte*



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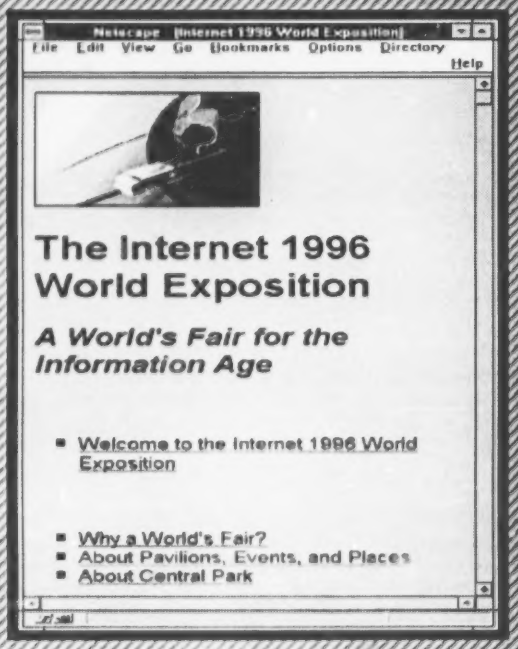
NetTeach News

NETNOTES

# THE INTERNET 1996 WORLD EXPOSITION


Netscape [Internet 1996 World Exposition]
File Edit View Go Bookmarks Options Directory Help
The Internet 1996 World Exposition
A World's Fair for the Information Age
Welcome to the Internet 1996 World Exposition
Why a World's Fair?
About Pavilions, Events, and Places
About Central Park

**The Internet 1996 World Exposition**
**URL:http://town.hall.org/fair/**

**The Internet 1996 World Exposition** is the World's Fair for the Information Age. Communities, companies, engineers, and Networking Pioneers are working together to introduce new technologies to a mass audience.

The site of this World's Fair is the WORLD. There will be activities both online and in the real world happening around the world. The fair will last for all of 1986.

Anybody can open a pavilon. A core infrastructure has been designed that will support the world's fair and be left behind when it is done. This is called Central Park.

For more information about the World's Fair see

**http://town.hall.org/fair/**

or send a message to
Carl Malamud, the Secretary General of the Internet 1996 World Exposition at:.

**fairmaster@park.org**

NETTEACH NEWS is the chosen newsletter for pioneer networking educators worldwide. It provides a forum for the exchange of information about how advanced networking technologies are changing society, and in particular the way we teach,learn, and deal with one another. It is intended as a platform for many varied personal and collective travels to new "networlds" for educators around the globe and a pathway to emerging global living learning villages.

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For RIE 11/14/95

Connecting Learners Around the ...

# NetTeach News

## So What Do Jiminy Cricket, Big Brother, Warning Labels, And Web Meltdowns Have To Do With Equity and Quality Learning On The Internet?

Many parents, educators, and community leaders are worried about unrestricted use of the Internet by minors. Much of this "Net-Anxiety" results from an apparent naiveté or ignorance by many of exactly what the Internet is and who is using it, media frenzy and predictable US Congressional debate on pornography and pedophiles on the Internet that led to the passing of the Communications Decency Act of 1995. ❶ Parents are worried their children will be shocked, perverted, or electronically abused and educators are concerned that anxious parents will pull the plug on the new technology or point the accusing finger of prosecution if an "electronic" incident occurs in school.

The good news is that pornography and pedophiles on the Internet ***can be reasonably*** dealt with using some common sense measures, existing laws, good parenting, good teaching and technology. However, there are those who are calling for ***more drastic measures*** that will certainly test the US Constitution's First Amendment,❷ and may seriously infringe on a learner's right to learn. These negative views and actions may very result in an Internet that is only for the privileged learners whose families have the resources to provide access from home and moreover may well retard the development of the Internet as a quality learning place for all learners and open the floodgates to mass commercialism and entertainment at its vilest form.

*(Continued on page 3)*

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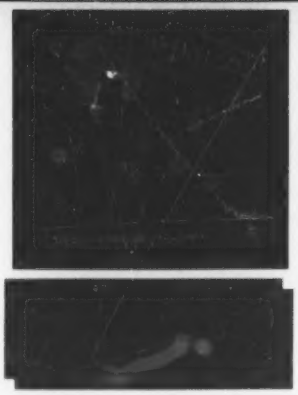

## Song of the Open Road

Afoot and light-hearted I take to the open road,

Healthy, free, the world before me,

The long brown path before me leading wherever I choose.

.....Here is the test of wisdom,

Wisdom is not finally tested in schools,

Wisdom cannot be passed from one having it to another not having it,

Wisdom is of the soul, is not susceptible of proof, is its own proof,

Applies to all stages and objects and qualities and is content.

*Song of the Open Road,* **Leaves of Grass**, Walt Whitman

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# Flash and Burn Journalism

Recently, my son came home with his Fourth Grade Edition **Weekly Reader** which featured an article entitled "*Plugging Holes In the Net.*"❶ Normally, I don't attempt to make much of a Weekly Reader article but merely listen to my son read it aloud or help him work out the answers to the questions if he needs help. However, my fingers reached out for the keyboard when WR asked their young readers, "*Would your parents let you wander around a city of 2.5 million people without them*?". I know taking on Weekly Reader will be viewed as either a sign of major emotional strain or an unfair attack on an American icon but I truly wonder if the Internet can ever get a fair trial with this kind of flash and burn journalism, albeit watered down with milk and cookies.

First of all, Weekly Reader *suggests* that there are 2.5 million people on the Internet but the best current estimates are closer to thirty to fifty million Internet e-mail users and some 10 million people with full access to the world wide web. Nitpicking, perhaps. Secondly, the question raised by a Weekly Reeder editor is a curious question to pose to nine and ten year olds, most of whom have never visited the Internet with or without their parents but may have heard something about the Internet and may be curious to learn more. If the intent is to make these children afraid to use the Internet with or without their parents or teachers, then the article probably succeeds. However, if the intent is to educate children about the Internet and encourage the proper and productive use of the technology, then the article surely fails because it pays little attention to how the technology is being used by children to engage in new collaborations and explore new frontiers of learning not possible using older technologies or other tools of learning.

My argument is not really with Weekly Reader but with the media reporting in general on cyberkids and cyberporn. Much of the reporting has been negative, little based on actual fact or even reasonable guestimates, and just too many of these articles present very sensitive and potentially volitale issues in a somewhat unbalanced, incomplete and often unprofessional manner. I am certain some of the problem results from journalists covering these matters who are not necessarily well-acquainted themselves with the technology and perhaps somewhat biased against it. No matter the result is that the media has helped confound the public rather than inform the public and by engaging in camp journalism is needlessly escalating societal fears about the Internet at a time when many schools and school systems are trying to get more public support to be able to bring this resource to more learners in their classrooms.

Much of the reporting on cyberporn and pedophiles "stalking" kids on the Net gives the impression that this is a youth crisis of significant proportion unique to the Internet environment. However, so far there have only been a handful of reported and substantiated incidents involving minors on the Internet, and many of those incidents did not occur on the Internet at all but rather on private commercial networks.

It is understandably difficult for responsible parents, teachers and citizens to put this issue into a proper perspective given the lack of good media reporting. But somehow those of us who know better have to reach out and calm the public not with more disinformation but with the truth based on our real experiences. We need to conduct and promote studies that clearly lay out relevant issues such as the report, *Teachers & Technology -- Making the Connection,* released this Spring by the now defunct US Office of Technology Assessment. ❷ That report calls for more resources to be allocated to teacher training in order to better ensure that the technology will be used properly and effectively in classrooms. We also need to share firsthand experiences using the Internet with all ages of children and we must begin to document how they are using the technology and how that use is either positively or negatively impacting on their education. We need to find our voices or otherwise knee-jerk, quick-fix remedies will be adopted that at best will only temporarily resolve situations and more likely will delude many parents and less informed educators with false hopes and result in more serious problems later on that will ultimately diminish the viability of the Internet as a legitimate learning place.

❶ Weekly Reader, Edition 4, Volume 77, Issue 4, September 29, 1995, p.3

❷ U.S. Congress, Office of Technology Assessment, Teachers and Technology: Making the Connection, OTA-616 (Washington, D.C.: U.S. Government Printing Office, April 1995)

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# Dealing With Minors On The Internet

*(Continued from page 1)*

## I. Reasonably Dealing With Porno and Perverts

### Familiarity or Good Intelligence

The first and most important prerequisite for *reasonably* dealing with cyberporn and cyberperverts are for parents and educators to put the problem in perspective by becoming acquainted with the Internet and how minors are using it. Ignorance often breeds misunderstanding and fuels fear and prejudice.

Current media reporting has tended to sensationalize and focus on the negative. There have been some incidents of minors contacted by adults with wrong intentions and of minors accessing pornographic sites but these incidents are few and isolated. This is perhaps because Internet users under 18 years old represent around 2 percent of the total Internet using population but also because those minors who are using the Internet are benefiting from the guidance of their parents, their teachers, and their own good sense. This is not to downplay the potential for more problems as both the adult Internet using population and the under eighteen Internet using population expand but rather is to suggest the need for more research into the sociology of networking. .

**Objectionable materials can be found almost anywhere on the Internet, but not easily. Despite press accounts that Cyberporn sites are everywhere, the fact is for themost part you really have to know what you are looking for and even then it's not all that easy.**

Objectionable materials can be found almost anywhere on the Internet but not easily.. Despite press accounts that Cyberporn sites are pervasive, the fact is for the most part you really have to know what you are looking for, and even then it's not all that easy. Accidental trips to porno sites by young learners are not likely and should be easily avoided. It is perhaps important to point out that even some quality content areas such as web sites on human anatomy or a surgical procedure may prove to be too graphical or difficult for young learners or adults with weak stomachs. However, there are many wonderful learning resources on the Internet that are not available anywhere else and were exclusively created for various ages of learners.

### Common Sense

The quandary parents face in regard to their children accessing inappropriate material from the Internet is in one sense no different than a visit to the local library or the local bookstore. Typically, parents of younger children will help these young readers pick out a book, and if their first grader heads off on his or her own to find a book in the library and comes back , holding *Grey's Anatomy* or *Canterbury's Tales,* the parent tries to explain why those books are not necessarily suitable or better yet offers an alternative book that is more suitable to that age group. If you walk into your high schooler's bedroom and find a copy of Playboy under the bed, you have to decide the best way to communicate your disappointment or displeasure to your offspring, the same as you would if you found your high schooler visiting a cyberporn site.

The quandary regarding meeting unsavory people on the Net is the same quandary a parent faces every day when their three year old breaks away from them in a department store, or their twelve year old heads off on an unannounced bike trip, or their eighteen year old heads off to a party with friends. We admonish our young children "not to talk to strangers" and we urge our older children to be careful who they confide in and "hang out" with.

Most parents understand that the most effective "blocking" mechanism is a good offense and that good offense is offered by sound and wise parental and educator guidance and clear, concise and honest communication.

### The Best Defense Is A Good Offense

Parents and teachers need to cultivate in learners from the earliest of ages an understanding of "good" and "bad" information. Some of those who promote the use of the Internet in schools recommend that the technology be used for older students, but others believe that if the technology is introduced at earlier levels and children are properly taught ethical and appropriate use of technology at various levels of maturity,

*(Continued on page 9)*

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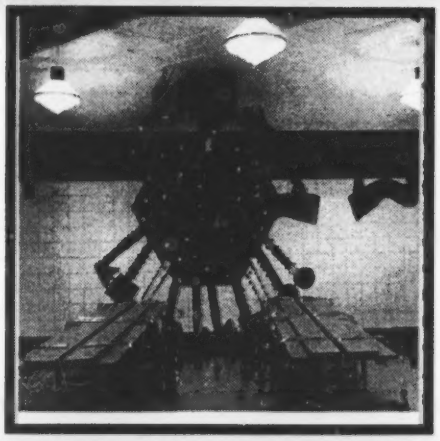
# Young Children Taking Journeys into Cyberspace

By Elissa Gerzog



Imagine, a monster, created part by part, by young children in classrooms from four different continents. Imagine, classrooms around the world linking up to measure and compare window, chalkboard and room sizes. Imagine, young children communicating information about endangered species with classrooms in places where other endangered species inhabit. Sharing ideas and information are ways young children can take a journey into Cyberspace traveling the Information Super-highway.

Incorporating telecommunications components into regular classroom learning for young children, opens classroom walls to the world. Children become globally aware, and sensitive to cultural diversity. A class in Florida learned that "closets" are called "cupboards" from their key-pals in Australia. One morning the children found e-mail that arrived during the night from the same Australian friends. Although the arrival date on the e-mail showed it came on Monday night, the Australian children had signed it Tuesday afternoon. The e-mail was dated the next day! This teaching moment led to a discussion about time zones as the lights were turned out and flashlights focused on globes.

When teachers use opportunities to incorporate telecommunications into regular classroom activities, they provide children with an exciting and motivating purpose for learning how to read and write. Infusing telecommunications enhances and extends learning. The children who shared in the creation of the monster learned the positive values of cooperative collaboration. As they exchanged pictures by regular mail, the children learned the importance of following directions as they and their teachers both discovered with amazement how much the monsters, designed from the collaborative descriptions, looked alike.*

Children take a step towards information literacy when they see that the computer and telecommunications can be used to answer their own questions. In a pre-school one day, after reading "The Very Hungry Caterpillar" by Eric Carle, a little girl asked her teacher how long a caterpillar lives after it turns into a butterfly. The school did not have a library, nor any ready resources to help the teacher answer the little girl's question. The teacher posted a note to the Internet address of Dr. Science. Before the teacher even had a chance to seek the answer for the little girl Dr. Science sent the answer. When the comet, struck Jupiter on July 16, 1994, images were available on Internet resources within hours, long before they were published in the next edition of local newspapers.

While dedicated phone lines are nice, unless a class or school is going to use the line full time, they are not absolutely necessary. Most Internet resources are available through e-mail. Since e-mail messages take just a few moments to send and receive, regular school lines can be used without tying them up for more than the length of a normal call.

One ingenious teacher tape recorded modem sounds from her home computer and "made believe" the computer at school was doing all the work. She would save e-mail messages to the word processor, then print them out at school, so the children would think the messages arrived on their classroom computer, which didn't happen to have a modem.

For the first time, during the Christmas season of 1994, children could send their letters to Santa's e-mail address. He answered all letters personally within a day. This interchange delighted children around the world.

Most young children today have always had technology and computers around them. These children learn to use technology naturally and with ease, sometimes even quicker than adults. Internet, e-mail and Cyberspace are becoming common language on radio, TV and in newspapers making children more aware of these words. Writing Santa, finding questions answered by on-line experts, collaborating with children around the world about books and topics of interest, or creating a cooperatively designed monster, provide natural ways for young children to take journeys into Cyberspace.

For more information about successful classroom collaborations with young children see :the Monsters, Monsters, Monsters Web Site at http://www.coedu.usf.edu/inst_tech/students/gerzoge/index.html and http://www.coedu.usf.edu/inst_tech/students/gerzoge/student.html

&&&&&

*Elissa Gerzog is a kindergarten teacher for the Dade County Schools in Miami, Florida. Her work is nationally recognized and she is a frequent presenter at major educational conferences.*

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# WhaleNet —Setting Sail for New Worlds of Learning

WhaleNet is a new and dynamic Internet-based learning program that allows learners to study whales, the marine habitat, and environmental studies in a highly interactive, interdisciplinary and engaging manner. Researchers and students from around the world are encouraged to share their data and experiences. The data collected is compiled and stored on the WhaleNet Server to be used for research as well as in interdisciplinary curricular activities.

The WhaleNet program provides teachers and students with "hands-on" materials and supplementary curricular activities that are designed to stimulate learning, enhance environmental awareness, cultivate science literacy, and improve problem solving and critical thinking skills.

WhaleNet is funded by the National Science Foundation and sponsored by Wheelock College and Simmons College in Boston. There are currently some seventy-eight affiliate organizations representing research groups, educational organizations, and whale watch companies. These various affiliate groups participate in various projects and various aspects of the program. MUSENET, for example, provides technical assistance and the Whale Conservation Institute developed the Elementary Whale Study Curriculum which is used by young learners.

## *Some New Projects*

There are several new projects under development including:

1. **Satellite Tagging Observation Program (STOP)** Students and educators will work in conjunction with international research organizations in a unique program using advanced satellite technology and telecommunications to monitor and research the actual migration patterns of movements of selected species of whales throughout the oceans of the world.

2. **Remote Research Platform** WhaleNet will establish satellite links with the Whale Conservation Institute's vessel Odyssey to transfer data, information, and images from their whale research ECOTOX program, and WhaleCAM project to WhaleNet.

3. **Habitat Wednesday** Participating researchers working with whale watches and/or other research programs will provide sighting records from each Wednesday trip to the WhaleNet server. This will give weekly "snapshots" of the movements of marine mammal species.

4. **Allied Whale and the Humpback Whale Catalogue** Students will be able to access portions of the Humpback Whale Catalogue at the College of the Atlantic. This will allow identification of sighted humpback whales and/or the study of the history of a particular whale.

5. **WhaleNet Pals** An indexed data base that will allow classes and educators to locate and set up collaborative projects with other classes around the world.

## How To Access WhaleNet

There are several ways to access WhaleNet.

By Gopher. gopher://whale.simmons.edu

By World Wide Web: http://whale.simmons.edu

By Telnet connect vmsvax.simmons.edu

To connect as a guest to EnvironNet/WhaleNet.

- Telnet vmsvax.simmons.edu or IP 134.140.112.5]
- Or via direct dial up at +1 617-521-3000
- When you reach the system, use ENVIRONET as username and SIMMONS as password. This should

*(Continued on page 11)*

Netscape - [WhaleNet]
File Edit View Go Bookmarks Options Directory
Window Help
Welcome to WhaleNet
WhaleNet is a unique interdisciplinary, hands-on, collaborative telecomputing project to foster excitement and learning about the natural world in schools across the nation and around the globe. WhaleNet is a combined project of the biology departments at Simmons and Wheelock Colleges with support from the National Science Foundation, and technical assistance from MuseNet - the Multi-User Science Education Network.
For general information, see the WhaleNet Brouchre
For a summary of the WhaleNet Project, see the WhaleNet Overview

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# CoVis — Cultivating Science Literacy Using Internet Tools

The Learning Through Collaborative Visualization Project (CoVis) is working to enhance science education by making it more like the collaborative, project-based environment of the scientific community. The CoVis community includes researchers at Northwestern University, the University of Illinois at Urbana-Champaign, and the Exploratorium, along with teachers and students at more than 45 high schools and middle schools throughout the United States. Recently, the CoVis Project announced the debut of he CoVis Geosciences Web Server:

http://www.covis.nwu.edu/

and the UIUC-CoVis Geosciences Web Server:

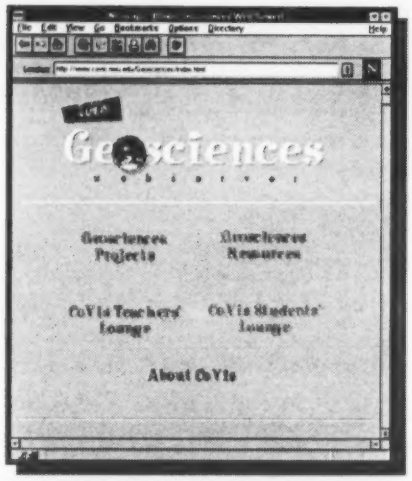
http://www.atmos.uiuc.edu/geosciences/geosciences.html

The purpose of these servers is to provide K-12 teachers and students withonline resources specially designed to support project-based inquiry in the Geological Sciences. To help support the special needs of different audiences, the CoVis Geosciences Server has been designed for CoVis classrooms and the general K-12 community, and the UIUC server is targeted more towards the needs of the atmospheric sciences and broader scientific communities. There is an almost complete cross-linkage and sharing of resources across these two servers, emphasizing the close relationship that CoVis believes should exist between the K-12 and scientific communities.

While a number of unique features of these servers are currently reserved for use by the CoVis community, there are many resources that the Web community at large may find innovative and useful. These include: a growing database of classroom projects and activities in the Geosciences; an extensive collection of annotated network-resources; a collection of multimedia instructional modules in the atmospheric sciences; and new web-based visualization environments to explore both the greenhouse effect and real-time weather data.

The CoVis Weather Visualizer is a particular highlight of these servers: it allows users to generate customized weather images "on the fly" from real-time weather data. Context sensitive help and explanations make complex imagery understandable by novices. The range of analysis options available will make this tool valuable to advanced users as well.

The CoVis Project is funded by the National Science Foundation and the Illinois State Board of Education/ Eisenhower Program.




COVIS GEOSCIENCES WEB SERVER
http://www.atmos.uiuc.edu/geo-sciences/geosciences.html

"A PROJECT CONSISTS OF AN INDIVIDUAL OR GROUP ENGAGED IN LONG-TERM, IN-DEPTH ACTIVITY THAT RESULTS IN EITHER NEW KNOWLEDGE, AND/OR NEW ARTIFACTS."

(See Project Pedagogy in CoVIS at: http://www.covis.nwu.edu/Geosciences/philosophy/projects.html)

For more information about the Project contact:

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Northwestern University, School of Education & Social Policy
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# Bell Atlantic's World School Home Page Hits The Net

The Bell Atlantic WORLD SCHOOL program, which links West Virginia public schools to the Internet, now has its own home page on the World Wide Web.

On October 13, 1994, Bell Atlantic unveiled the WORLD SCHOOL home page at "WORLD SCHOOL and Beyond... A Technical and Educational Symposium," being held Oct. 12-14 at Flatwoods, W.Va.

"Our home page will showcase the significant progress West Virginia has made in incorporating technology into the classroom," said Dennis Bone, Bell Atlantic-West Virginia president and CEO. "The WORLD SCHOOL home page also will provide West Virginia teachers and schools a place to find resources to help them use the Internet in their classroom and will allow them to collaborate with their peers around the state or around the world."

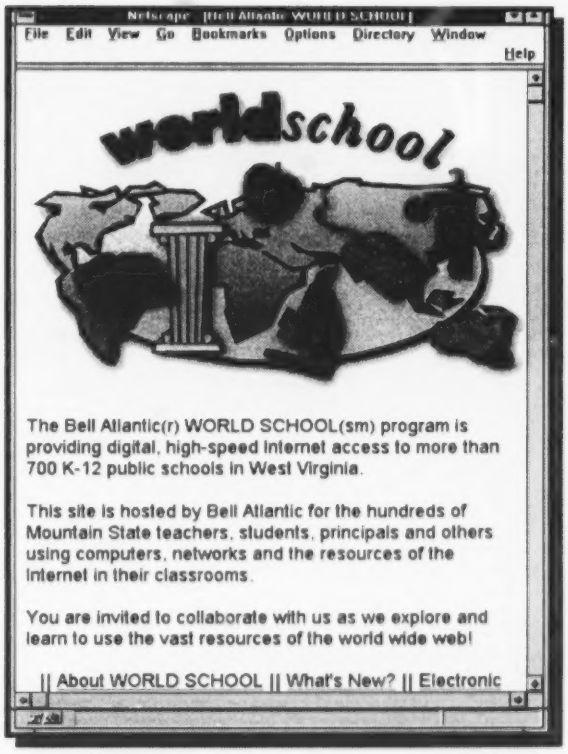
The Internet address of the WORLD SCHOOL home page is

**http://www.bell-atl.com/wschool**

The home page includes information about the WORLD SCHOOL program and participating schools, ready-to-use classroom resources, and links to other K-12 resources available on the Internet from around the world. Several special features also reside on the home page, including: a collaborative classroom activities page where WORLD SCHOOL teachers share what they're doing; an electronic lesson planner that points teachers to West Virginia-specific information on the Internet; the Newsgame current events quiz, which is developed by WSAZ-TV Newschannel 3 in Charleston/Huntington; and the Smokehole Project, a series of lessons -- developed in cooperation with the Nature Conservancy -- that are designed to teach middle school students about conservation.

Five West Virginia educators oversee the content and direction of the WORLD SCHOOL home page: Bill Burrall of Moundsville Junior High School; Lou Casini of Oak Glen Middle School; Bob Frostic of Horace Mann Junior High School; Phyllis Justice of the West Virginia Department of Education, and Lana Turner of Chapmanville Middle School.

Under the WORLD SCHOOL program, Bell Atlantic is linking more than 700 kindergarten through twelfth-grade public schools to the Internet using high-speed, digital Frame Relay service. Currently, 95 schools are linked to the Internet through WORLD SCHOOL.


File Edit View Go Bookmarks Options Directory Window
Help
worldschool
The Bell Atlantic(r) WORLD SCHOOL(sm) program is providing digital, high-speed Internet access to more than 700 K-12 public schools in West Virginia.
This site is hosted by Bell Atlantic for the hundreds of Mountain State teachers, students, principals and others using computers, networks and the resources of the Internet in their classrooms.
You are invited to collaborate with us as we explore and learn to use the vast resources of the world wide web!
|| About WORLD SCHOOL || What's New? || Electronic

Bell Atlantic Corporation is at the forefront of the new communications, entertainment and information industry. The Philadelphia-based company provides a full array of local telecommunications services throughout the mid-Atlantic region and is a leader in national and international wireless communications. The company is also a partner in TELE-TV, a national alliance developing video and interactive programming and services, and has substantial holdings in international markets.

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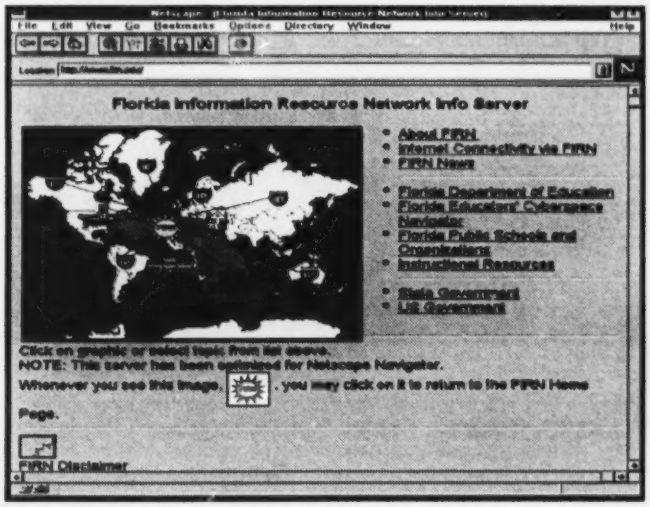
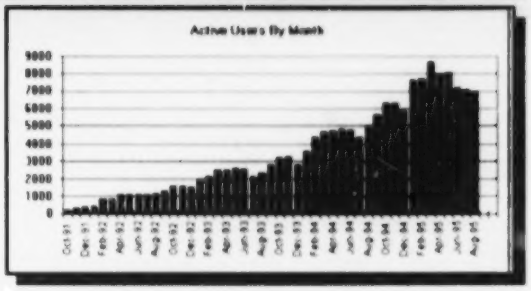
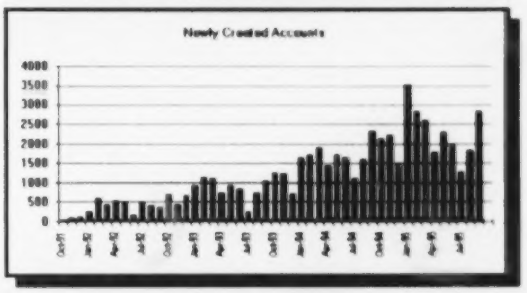
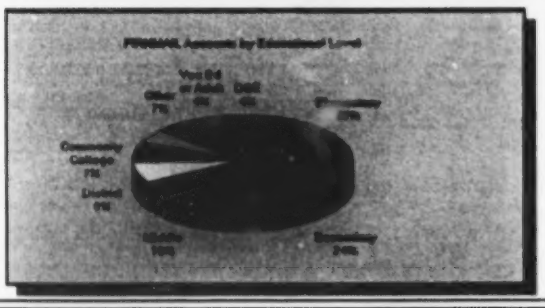
# The Florida Information Network Opens FirnWeb


Florida Information Resource Network Info Server
About FIRN
Internet Connectivity via FIRN
FIRN News
Florida Department of Education
Florida Educators' Cyberspace Navigator
Florida Public Schools and Organizations
Instructional Resources
State Government
US Government
Click on graphic or select topic from list above.
NOTE: This server has been optimized for Netscape Navigator.
Whenever you see this image, you may click on it to return to the FIRN Home Page.
FIRN Disclaimer

**The fundamental goal of the Florida Information Resource Network is to provide Florida's educators with equal access to the computer resources that serve public education.**
**Introduction, FIRN 1994 Annual Report**
**gopher://gopher.firn.edu:70/00/FIRN/Report/fiveyr.int**



In 1982, the Florida Information Resource Network (FIRN) was established to basically support the more efficient and rapid transfer of administrative data from school districts to the State Department of Education as well as within the Florida Community College System using computer networks. This was a bold move by the State of Florida and the State and FIRN have continued to pioneer the use of electronic networks in support of educational facilities and more recently in direct support of learners and teachers.

FIRN's mission has expanded as the technology and its applications have evolved. Currently, FIRN supports administration, research and instruction. In 1993-95, FIRN made major strides in its effort so support teachers and learners at the K-12 level. Both the FIRN gopher and FIRN Web offer educators access to a full range of network-based instructional material, and FIRNMAIL allows teachers and students to communicate within the State and via the Internet to the others around the world.

FIRN currently offers teachers and students access to the Internet via two main mechanisms:

(1) Dial-up Telnet, SLIP and PPP servers;

(2) A reduced rates for school districts and community colleges with SURAnet for TCP/IP connections.

Currently, FIRN has 275 dialup lines in 37 locations around Florida. In August 1995, there were 7,000 active FIRN users, in the third quarter of July 1995 over 2700 new users were added to the system. Over sixty-seven percent of all FIRNMAL accounts were allocated to K-12 users—twenty-seven percent elementary, twenty-four percent secondary, and sixteen percent to middle schools.

FIRN user policy guidelines are set forth in its Acceptable Use and Access Use Policy Statements.

For information regarding FIRN, check out FIRNWEB at www.firn.edu or the FIRN gopher at gopher://gopher.firn.edu/ or send e-mail to helpdesk@mail.firn.edu.

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# Guidelines For Minors On The Internet

*(Continued from page 3)*

there is less likelihood that more serious abuses or misuses of the technology by older students who can usually find their way around technology "walls" and are more independent users of technology will occur.

Teachers, parents, and media specialists should work with children at all ages to find web sites that will help them conduct research at their level of understanding. Young learners need more adult guidance than their older brothers and sisters to avoid accidentally visiting web sites, chat lounges or other electronic places that are geared more for adults or more mature learners. However, older middle school and high school students can also benefit from the expertise and experience of adult mentors who can not only point out where do go on the Internet but when "not to use" the Internet and to instead use alternative technologies and print publications. Adult mentors can also introduce ethical behavior on the Nets based on the age level of the learner and can at last resort revoke the "privilege" of using the Internet for research or creative expression if used unwisely, irresponsibly or for wrong purposes.

## Acceptable Use Policies

Schools, libraries, and youth community centers have some legitimate liability concerns that need to be addressed in a society that is prone to legal action. Many schools and school systems around the globe have worked out a set of general guidelines for student access to the Internet using school accounts that must be read and agreed to by parents, teachers, and students. These Acceptable Use Policies or AUPs as they are more commonly called vary somewhat but they provide the parameters of acceptable behavior and reveal the consequences of abuse or misuse of Internet privileges. The CoVis Project — See page 6 in this issue— succinctly states the rationale for acceptable use policies:

- They help educate the student and their parents about the kinds of tools they will use on the network and what they can expect from those tools (in a general way).
- They help to define boundaries of behavior, and more critically, specify the consequences of violating those boundaries.
- They specify the actions that a system administrator might take in order to maintain or "police" the network-so there are no surprises during the school year. They may outline general worse case consequences or specific responses to specific policy violation situations. ❶

**The Board generally supports access by students to rich information resources along with the development by staff of appropriate skills to analyze and evaluate such resources. In a free and democratic society, access to information is a fundamental right of citizenship.**

Bellingham Public School District 501, Board Policy - Student Access to Networked Information Resources. (See http://www.bham.wednet.edu/2313inet.htm)

Many community, educational and private commercial networks are also using AUPs with minors as well as with adult users. Commercial Internet access providers are not content providers and are unable to truly monitor individual user activities on the Net. They generally do not demand AUPs but assume that parents paying for their children's access should use common sense and good parenting and should only allow minors to use the Internet with a level of supervision warranted by age and degree of maturity.

## Blocking or Filtering Software

Some technological solutions are now available in the marketplace that allow

*(Continued on page 10)*

**The following guidelines are intended to be helpful and provide a base from which district and school policies can be tailored. While the emphasis here is on appropriate use, there is no intent to diminish the vital nature of electronic information services. The concerns described are real, but they should not discourage school officials from planning for the appropriate use of one of education's newest and most valuable tools.**

California Department of Education: Electronic Information Resources Acceptable Use Policy. District Guidelines (See: gopher://goldmine.cde.ca.gov:70/00/C_D_E_Info/Technology/Acceptable_Use/Policy )

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# Other Measures To Control or Limit Access

*(Continued from page 9)*

parents and educators to "block" unwanted material.. In January 1995, SurfWatch Software, Inc. was founded with a mission to "deliver tools which help people better use technology to solve social problems created by the explosion of technology." ❹ SurfWatch 1.0 is now marketed for both Mac and Windows environments. This software filters sexually explicit material on the Internet and also offers a subscription service which updates the list of blocked sites. Cybersitter 1.2 is a blocking software for use with Microsoft Windows which blocks objectionable WWW sites, news groups and provides intelligent message and e-mail filtering.❺ Scantron Quality Computers introduced theLINQ server. Among other features theLinq offers:

- A firewall system, including a proxy FTP and Web server, to prevent students from accessing inappropriate FTP and Web sites.
- Your own Usenet news server for discussion groups, or access to someone else's news server. TheLinq gives you powerful filtering capabilities. ❻

Other similiar products will be appearing in a computer store near you. Despite the fact these companies claim to be the ultimate key to a safe Internet, there are no absolute guarantees short of total access denial. These filtering technologies, however, offer a quick and reasonable technology fix and an aura of protection that might calm anxious parents or nervous schoolboards.

## Alternative People Blocking and Filtering and Limiting Real-Time Network Access

Parents and educators with time can engage in their own blocking and filtering. Once a day, once a week, or once a month a parent or teacher can download web sites that are desirable for use in a given curriculum area or area of student investigation or interest. Teachers and parents can use this activity as a learning experience with students and engage them in the process. Even though this is a form of censoring it can serve to instruct students on ways to determine "good" and "bad" web sites from a content and purpose perspective. As the student matures and better understands the environment, the student is better equipped to be able to "productively" use their research time on the Internet and not engage in endless aimless wanderings

## Coding, Tagging or Rating Internet Sites

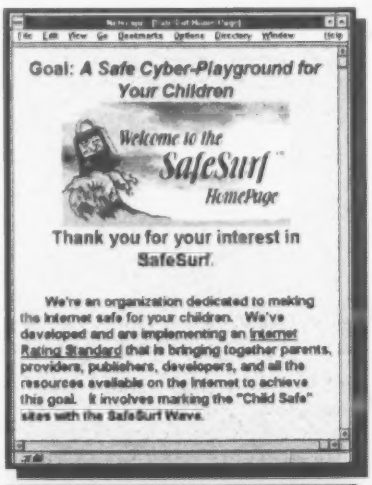
In June, US Senator Charles Robb of Virginia introduced an amendment to the Telecommunications Competition and Deregulation Act (Amendment No. 1271). This Amendment called for:

> .. the voluntary use of tags in the names, addresses, or text of electronic files containing obscene, indecent, or mature text or graphics that are made readily available to the public through public information networks in order to ensure the ready identification of files containing such text or graphics; ❼

Also in June, the Network Working Group of the Internet Engineering Task Force (IETF) also released an Internet Draft entitled, "*KidCode:Naming Conventions for Protecting Children on the World Wide Web and Elsewehere on the Internet Without Censorship.*" This draft suggests that:

> ..a "KidCode" naming convention be used to inform web browsing programs when the material being made available on the web is of a

*(Continued on page 12)*


Goal: A Safe Cyber-Playground for Your Children
Welcome to the SafeSurf HomePage
Thank you for your interest in SafeSurf.
We're an organization dedicated to making the Internet safe for your children. We've developed and are implementing an Internet Rating Standard that is bringing together parents, providers, publishers, developers, and all the resources available on the Internet to achieve this goal. It involves marking the "Child Safe" sites with the SafeSurf Wave.

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# ENVIRONET: An Environmental Study Collaboratory

**ENVIRONET HOME PAGE**
**HTTP://WHALE.SIMMONS.EDU/ENVIRONET.HTML**

EnviroNet is a "network of teachers, scientists, environmental educators and others who utilize telecommunication to enhance environmental science education," that was created in 1992 with funding from the National Science Foundation. The purpose of the project is to enhance environmental science education at the middle and secondary levels in New England through the use of telecommunications.

Initially, some forty teachers from seven northeastern states were provided access to the Internet via Simmons College or other academic institutions. They were trained in the use of the Internet, and utilized EnviroNet for specific monitoring projects as well as for communications with other educators from around the world. Recently, the NSF awarded Simmons College a three-year Teacher Enhancement grant to expand EnviroNet. The new grant will be used to develop and support interdisciplinary teams among 150 K-12 teachers within 30-40 school systems in New England.

Teachers with Internet access but not directly involved in the EnviroNet Project can also participate in the various monitoring programs and discussions. Monitoring programs for 1995-1996 include: Acid Rain, Bird Watch, Plants, Lichens, Ozone, Roadsalt, Roadkill, Vernal Pools, Watershed and WhaleNet.

# WhaleNet — Collaboratory Learning (Con't from p.5)

*(Continued from page 5)*

put you at the BULLETIN> prompt

- To access the WhaleNet Bulletin Board, at the BULLETIN >prompt type BULLETIN>1 for the introductory message, then at BULLETIN>dir. Type the number of the file you wish to read
- To sign off type BULLETIN>exit ENVIRONET

For more information contact:

Michael Williamson,
williams@whale.simmons.edu
WhaleNet Coordinator, Wheelock College, 200 Riverway, Boston, MA 02215 at 617/734-5200, X256, Fax 617/566-7369,
or
Paul Colombo, colombo@whale.simmons.edu
EnviroNet, Park Science Bldg., Simmons College, 300 Fenway, Boston, MA 02115, 617/521-2665.

&&&&&&

***Other Related Web Sources::***

**MuseNet**
http://www.musenet.org/

**Allied Whale, College of the Atlantic**
http://www.coa.edu/

**New England Science Center**
http://www.nesc.org/

**Whales: A Thematic Web Unit**
http://curry.edschool.Virginia.EDU:80/~kpj5e/Whales/

**Charlotte, The Vermont Whale**
http://www.uvm.edu/whale/whalehome.html

**Teacher's Guide from Sea World**
http://www.bev.net/education/SeaWorld/teacherguides.html

**Ocean Planet, A Smithsonian Exhibit**
http://seawifs.gsfc.nasa.gov/ocean_planet.html

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# The Communications Decency Act of 1995

*(Continued from page 10)*

nature that might be unsuitable for children. Some aspects of the convention are also applicable to browsing by FTP, to news reading, and to other protocols as well." ❽

Two separate conventions were recommended: (1) for fixed URL's the permanent URL is itself used to specify the nature of the child-oriented restrictions; (2) for simpler or pre-existing URL, restrictions are enforced using a naming convention in conjunction with the standard web form mechanisms.

These codes would work with filtering or blocking technology and other procedures to basically censor out any sites that "voluntarily" agree to label themselves for "adults-only".

A parent's group called SafeSurf has introduced "The SafeSurf Rating System". This system proposes to identify 'good' sites for children as opposed to filter out the 'bad' sites. Kids would only be able to access the sites identified as "child-proof". Several layers of blocking would be available so that older children could access additional materials than younger children. This rating system would be used in conjunction with blocking and filtering technology. ❽

## II. More Drastic Measures

In June, the US Senate passed the Communications Decency Act of 1995. which was sponsored by Senators James Exon and Daniel Coats. This bill makes it a criminal offense to:

(1) knowingly within the United State or in foreign communications with the United States by means of telecommunications device makes or makes available indecent comment, request, suggestion, proposal, image, or other communication which is available to any person under 18 years of age regardless of whether the maker of such communication placed the call or initiated the communications

(2) knowingly permits any telecommunications facility under such person's control be used for an activity prohibited by paragraph (1) with the intent that it be used for such activity,

The penalty shall be a fine of not more than $100,000 or imprisonment not more than two years or both. ❿

The bill passed in an 84 to 16 vote. (For the complete voting results see:gopher://gopher.panix.com:70/0/vtw/exon/legislation/s314.final). House Speaker Newt Gingrich opposed the Senate bill on the basis that it constituted a violation of free speech. Major constitutional watchdog organizations such as the ACLU and the EFF have also opposed the bill.

Several US state legislatures passed similar legislation, and others are deliberating such legislation.

Both the House and the Senate continue to discuss these issues as they finalize their respective legislation on Telecommunications deregulation. The House has adopted more lenient measures in regards to the issue of minors on the Net and is promoting the use or at least the study of filtering technology.

## Possible Consequences

It is likely that many local governments will take the lead from the federal and state legislatures and adopt more restrictive local positions regarding the use of the Internet in schools. The local impact of this federal debate may very well result in decisions against introducing or funding the expansion of networking

*(Continued on page 13)*

**Empowering parents to control what their kids access over the Internet and enabling creators to protect their intellectual property from copyright infringement with technology under their control is far preferable to criminalizing users or deputizing information service providers as smut police.**

U.S. Senate Patrick Leahy (D. Vermont) in an Amendment entitled Censoring Cyberspace introduced to the Senate March 30, 1995.

**Article One**

**Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of press; or of the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.**

US Bill of Right
http://www.house.gov/Constitution/Amend.html

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# Minors On The Net— The Debate Continues

*(Continued from page 12)*

capability in schools and school districts or may result in strict censorship of networked materials available to school learners.

One of the real possible consequences of these efforts to *protect minors* may be that the rights of young learners to to freely learn may be violated and that only a few privileged young learners at home or in some schools will be able to enjoy the full benefits of Internet access.

Another possible consequence of this kind of legislation is the numbers of minors accessing the Internet will decline or become flat as States decide against continued funding of public K12 educational networks or localities decide against spending more money of technology development. This may result in decisions by network content producers, particularly those targeting the K-12 school population to move away from the Internet perhaps into commercial networks. Entertainment publishers targeting kids at home will continue to develop their materials and opportunities for quality learning may be diminshed.

## III. Conclusions

In answer to the question, what do Jiminy Cricket, Big Brother, Warning Labels, and Web Meltdowns have to do with equity and quality learning on the Internet? — everything and nothing. All are now offered as ways to protect minors but in a democratic society Jiminy Cricket is truly the only hope and the best guide and friend to minors, teachers, and parents. A good conscience is the best and fairest censor.

The major challenge to parents and teachers is to help young learners become conscientious students and users of new technologies. They need to learn that all information is not good and that some people are bad and beyond that they need to understand that we their parents and teachers trust them to make the right choices and to do what is right for themselves and for society as a whole.

### References:


❶Communications Decency Amendment of 1995, S.314, Passed June 14, 1995 See:gopher://gopher.panix.com:70/0/vtw/exon/legislation/s314.final, or search Thomas at http://thomas.loc.ov/

For Press and Other Commentary About this bill see:

*Don't Tread On Me: Accountability and Self-Regulation in CyberSpace* by Peter F. Harter, 29 March 1995, NY Times (http://www.nptn.org/cyber.serv/solon/ lic/exonessay.html)

EFF Censorship-Pornography (A MegaIndex of articles found at: http://www.eff.org/pub/Censorship/Pornography/

EFF Communications Decency Act (More articles related to the Exon Amendment and the CDA, See http://www.eff.org/pub/Censorship/Pornography/Comm_Decency_Act/)

A Letter from the Dept of Justice to Senator Patrick Leahy Opposing Bill-found at http://www.eff.org/pub/Alerts/doj_leahy_cda_050395.letter

Progressive Networks Page on the CDA see: http://www.prognet.com/contentp/rabest/exon1.html

Yahoo Index on CDA is found at: http://www.yahoo.com/Government/Politics/Censorship/Censorship_and_the_Net/Communications_Decency_Act/

❷ US Constitution found online at http://lcweb2.loc.gov:8080/ const-query.html

❸CoVis Acceptable Use Policy is found at: http://www.covis.nwu.edu/AUP-archive/CoVis_AUP.html and http://www.covis.nwu.edu/Papers/Fishman&Pea1993.html

For some Other good AUP sites and articles see:

Armadillo gopher on AUP at: gopher://riceinfo.rice.edu:1170/11/More/Acceptable

Armadillo WWW AUP page:http://chico.rice.edu/armadillo/acceptable.html

*Critiquing Acceptable Use Policies* by Dave Kinnaman at:http://www.gnn.com/gnn/meta/edu/features/archive/aup.html

Bellingham, Washington School District Internet Policy http://www.bham.wednet.edu/2313proc.htm

Los Angeles Unified School District AUP: http://lausd.k12.ca.us/aup.html

Taft High School AUP: http://198.189.0.232/

Utah Education Network AUP: http://www.state.lib.ut.us/uen.txt

Davis CountyElectronic Information Resources Contract: :http://163.6.7.9/contract.html

❹ SurfWatch Home Page: http://www.surfwatch.com/

❺ Cybersitter: http://www.pow-dist.co.uk/solidoak/cyber.html

❻ theLINQ: http://www.thelinq.net/thelinq.html

❼ Robb Amendment No. 1271 (US Senate-June 12, 1995) Congressional Record, Page:s*183 ((Related to: S. 652, Telecommunications Competition and Deregulation Act of 1995 )

❽KidCode: Naming Conventions for Protecting Children on the World Wide Web and Elsewhere on the World Wide Web. IETF, Network Working Group, Internet Draft, D.New, N. Borenstein, June 1995. (ftp://ietf.cnri.reston.va.us/internet-drafts/draft-borenstein-kidcode-00.txt)

❾SafeSurf, Home Page at http://www.safesurf.com/index.html (See also: http://www.safesurf.com/wave/time.htm, http://www.safesurf.com/wave/sspress2.htm, http://www.safesurf.com/wave/ssplan.htm)

❿Communications Decency Amendment of 1995, S.314, Passed June 14, 1995)


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# Cisco and MCI To Sponsor An International CyberFair for Schools

MCI and Cisco Systems recently announced they are sponsoring the International CyberFair for Schools as part of the upcoming online world's fair on the Internet, The Internet 1996 World Exposition. The CyberFair is a demonstration of how schools can share the knowledge and skills of their teachers and students on a world-wide basis.

Building on the global Internet platform, International CyberFair participants will effectively create curricular content for use by students around the world through cooperation, mutual discovery and content creation. Participating schools will be asked to conduct a research project involving community resources and publish their project on the Internet's World Wide Web

The Internet 1996 World Exposition, modeled after the great world's fairs at the turn of the 20th century, will start on January 1, 1996 and run the entire year. The International CyberFair , sponsored by Cisco and MCI, will begin in January and run through June.

## Basic Description

The International CyberFair for Schools, which is open to all K-12 schools on the Internet, is a demonstration of educational electronic publishing and use of the Internet's World Wide Web. "Share and Unite" is the theme of the CyberFair and will encourage schools and their communities to use the Internet to share resources, establish partnerships, and work together to accomplish common goals. Some examples of projects are: documenting historical landmarks, showcasing local specialties, and/or involving local tourist attractions.

Students and teachers from individual schools, or group of schools such as a school district, will work together on a community-based educational project and publish their information within the Global Schoolhouse pavilion of the Internet 1996 World Exposition.

The International CyberFair will be a featured activity in the Internet 1996 World Exposition, a world's fair for the information age. This world's fair will last all of 1996 and already includes participants from over 25 countries. "This world's fair is building a public park for the global village," said Carl Malamud, secretary- general of the World Exposition. "One of our highest priorities is the Global Schoolhouse Pavilion. We're delighted that MCI and Cisco are joining with groups such as the Kennedy Center in Washington and the Tokyo Aquarium to make the Global Schoolhouse a reality."

The International CyberFair for Schools is patterned from a CyberFair that MCI and Cisco implemented earlier this year with the Allen (Texas) Independent School District. More than 100 seventh and eighth grade students and 15 of their teachers from the Curtis Middle School participated in the cyberlearning experiment by creating their own sites on the World Wide Web. According to Curtis principal Ted Moore, "Our students and teachers learned a lot on this project from researching their projects on the information-laden Internet to learning and using HyperText Markup Language (HTML) in creating some very interesting and informative homepages on the World Wide Web. It was a very valuable and worthwhile experience for all of us."

The Global Schoolhouse/Global SchoolNet Foundation, will be coordinating many aspects of the International CyberFair for Schools.

## Registration Information

Registration for the International CyberFair begins in November and closes on January 15. Schools will be able to register at the Global Schoolhouse pavilion on the Internet 1996 World Exposition beginning next month.

Following registration, from January through mid-April, schools will be able to sign-up for CyberFair activities and work on their projects which are due April 15. Entries will be judged on presentation and content by participating schools and well- known Internet industry figures. Awards will be presented live on the Internet in June 1996.

To be placed on an electronic mailing list to receive CyberFair updates and for more details, school representatives can send an e-mail message to:

**lists@gsn.org**

In the main body of the message write:

**subscribe cyberfair @gsn.org.**

To find out more information about the Internet 1996 World Exposition, Internet users can point their browser to: http://park.org/fair or send an e-mail to luther@radio.com

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## NOVEMBER 1995

**29 Nov - 1 Dec Virtual Reality World'95 Conference and Exhibit**
Mecklermedia's annual Fall Virtual Reality World'95 Conference will be held in Boston at the World Trade Center. For Program information see http://www.mecklerweb.com/shows or ftp www.mecklerweb.com Path:/shows. For more information send e-mail to: vrconf@ mecklermedia.com; call +1 800-632-5537 or +1 203-226-6967.

**30 Nov-3 Dec Tel Ed'95**
Broward County Convention Center, Fort Lauderdale, Florida. Sponsored by ISTE. For more information contact: Cathy Hutchins, Tel: +1 904-824-2955, Fax: +1 904-829-5958. e-mail <hutchic@ mail.firn.edu>; Margaret Riel, Tel: +1 619-943-1314, Fax: +1 619-943-1314, and e-mail <mriel@ weber.ucsd.edu>

## DECEMBER 1995

**2 Dec 1995 First Annual Classroom Telecommunication Conference**, Pasadena Conference Center. Sponsored by the Association for Classroom Technologies (ACT/ CUE).Keynote address by Al Rogers, Executive Director, Global Schoolnet Foundation. For more information send mail to: C.T.C., P.O. Box 5546, Pasadena, CA 91117. e-mail to: ncarter@oxy.edu for more information or to register. See URL:http://www.ceo.cal.ca.gov/~rich/ctc.html

**5-8 Dec ICCE 95, International Conference on Computers in Education** Raffles City Convention Centre Singapore Sponsored by Association for the Advancement of Computing in Education Asia-Pacific Chapter (AACE APC) ICCE 95 will focus on a broad spectrum of interdisciplinary research topics concerned with theories, technologies and practices of applying computers in education. For more information contact: ICCE 95/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, e-mail: AACE@virginia.edu; tel: +1 804-973-3987; Fax: + 1804-978-7449 ICCE 95/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, E-mail: AACE@ virginia.edu; tel: +1 804-973-3987; Fax: + 1804-978-7449.

**11-14 December. Fourth International World Wide Web Conference: The Web Revolution.**
Boston, Massachusetts. More than fifty papers were selected from around the world. The Conference is sponsored by MIT's Institute of Technology's Laboratory for Computer Science and The Open Software Foundation. Some 2,000 world-class researchers, developers, industrial leaders and users will discuss major contributions advancing the state of Web technology in key areas such as security, virtual reality, tools and browsers, authoring environments and collaborative systems.To register contact: http://www.crs.lcs.mit.edu/registration-form.html

## MARCH 1996

**4-6 March. Midwest Education & Technology Conference. 13th Annual**
Cervantes Convention Center at America's Center, St. Louis, Missouri. For more information write to: Conference Coordinator, 1460 Craig Road, St. Louis, MO 63146, or call +1 314-692-1250.

**13-16 March. SITE 96, The 7th International Conference of the Society for Information Technology and Teacher Education.**
Phoenix, Arizona. For more information write to: SITE 96/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, or call +1-804-973-3987, or FAX +1-804-978-7449, or e-mail to: AACE@virginia.edu

**17-20 March. ICTE'96, Technology and Communications: Catalyst for Educational Change.**
New Orleans, Louisiana. For more information write contact: Telephone: +1-817-534-1220; Fax:+1-817-534-0096; E-mail: icte@icte.org; World Wide Web: http://www.onramp.net/~icte

## MAY 1996

**2-4 May. 1966 10th Annual VSTE Technology Conference**
Hotel Roanoke and Conference Center, Roanoke, Virginia. May 2 will be a full-day of hands-on workshops and May 3rd and 4th will be general sessions geared towards educators who work in the classroom and administrators who work with those educators. For more information contact: darkin@pen.k12.va.us or call +1 804-320-3424

## JUNE 1996

**11-13 June. NECC'96, Call of the North**
Minneapolis Convention Center, Minneapolis, MN. Hosted by Technology and Information Educational Services (TIES) and Sponsored by National Educational Computing Association in cooperation with University of Minnesota, St. Cloud University, and Twin Cities ASCT. For more infomration write to: NECC'96/TIES, 2665 Long Lake Road, Suite 250, Roseville, MN 55113-2535

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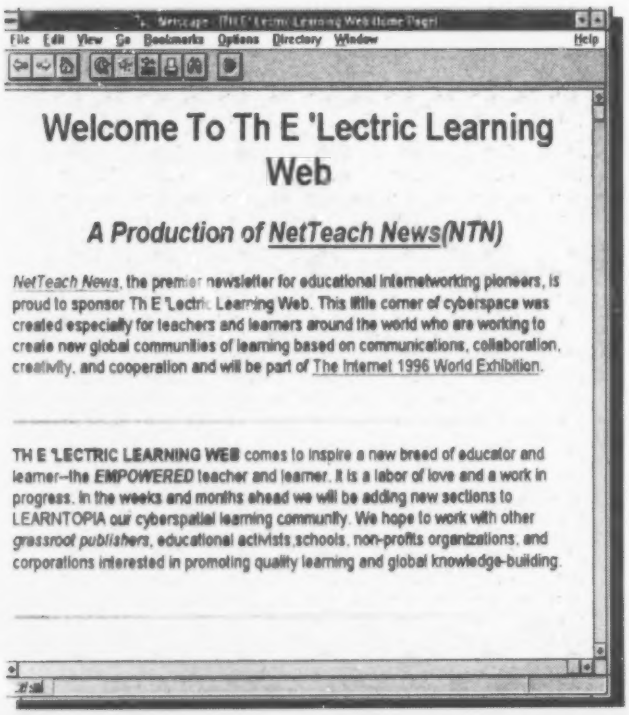
# TH E 'LECTRIC LEARNING WEB JOINS THE INTERNET 1996 WORLD'S EXHIBITION


File Edit View Go Bookmarks Options Directory Window Help
Welcome To Th E 'Lectric Learning Web
A Production of NetTeach News(NTN)
NetTeach News, the premier newsletter for educational internetworking pioneers, is proud to sponsor Th E 'Lectric Learning Web. This little corner of cyberspace was created especially for teachers and learners around the world who are working to create new global communities of learning based on communications, collaboration, creativity, and cooperation and will be part of The Internet 1996 World Exhibition.
TH E 'LECTRIC LEARNING WEB comes to inspire a new breed of educator and learner--the EMPOWERED teacher and learner. It is a labor of love and a work in progress. In the weeks and months ahead we will be adding new sections to LEARNTOPIA our cyberspatial learning community. We hope to work with other grassroot publishers, educational activists,schools, non-profits organizations, and corporations interested in promoting quality learning and global knowledge-building.

NetTeach News is proud to announce Th E 'Lectric Learning Web. As everything we do, this web site will be a collaborative work in progress . Our hope is to explore the collaboratory and communication utility of the web environment to bring together diverse learning circles and communities.

Th E 'Lectric Learning Web will be a Pavilion in the Internet 1996 World's Exhibition. We invite schools, universities, community colleges, non-profit organizations, corporations, governments and individuals around with world to work with us to put together the web-based Global Learning Community.

In this community, learning will be seamless and we hope that the emerging colonies will bring together communities of researchers and learners that have often been separated by country, culture, profession, institution and discipline.

We welcome you all to join us in this effort to redefine the boundaries of learning and to use the full power of advanced technologies to bring people and cultures together, using learning as the basis of the collaboration. Touching minds, touching hearts, and touching hands across the globe.

**http://www.chaos.com/learn.html**

**(Note: The Site initially will be found at IP 206.5.17.2)**

NETTEACH NEWS IS THE CHOSEN NEWSLETTER OF PIONEER NETWORKING EDUCATORS WORLDWIDE. IT PROVIDES A FORUM FOR THE EXCHANGE OF INFORMATION ABOUT HOW ADVANCED NETWORKING TECHNOLOGIES ARE CHANGING SOCIETY, AND IN ARCHITECTURE OF WAY WE TEACH, LEARN AND DO. WE WORK ON THE THESIS THAT THE INTERNET AS A PLATFORM OF MANY VARIED SOCIAL AND COLLECTIVE TRAVEL TO NEW NETWORKS FOR EDUCATORS AND IS THE GLOBE AND A PATHWAY TO BRINGING GLOBAL LIVING LEARNING WITH APPS

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Connecting Learners Around The Globe

# NetTeach News

VOLUME 3 NUMBER 6 NOVEMBER 30, 1995

## The Return of The Village Schoolmaster

*Teachers Who Feel Good About Themselves and Who Speak Up, Speak Out, Speak Honestly, and Speak Wisely*

Today, anybody with access to the Internet can celebrate an American Revival—the Return of the Village Schoolmaster. At a time when the experts on American education have declared the profession an endangered species,[1] the American schoolteacher is making a comeback. The pioneer networking teacher is leading their profession to assume a major role in the future global learning villages and virtual learning communities. For those of us who believe we are who we are because we had a teacher who cared and made us care, this revival brings more than nostalgia but also a hope for our children and all future generations of learners. However, to make this revival successful we need to understand the forces that have shaped and continue to shape the destiny of the American schoolteacher.

### *The Demise of the Village Schoolmaster*

In the 1700s, when the poet Oliver Goldsmith wrote his description of the Irish village schoolmaster in his famous poem *The Deserted Village*, the schoolteacher was viewed as a genuine professional in the eyes of the villagers. He was perhaps not as revered to the degree Goldsmith suggest but it is certain his position in the community was unimpeachable and that his expertise was acknowledged and his abilities respected by many if not most villagers.[2]

*(Continued on page 2)*

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## The Village Schoolmaster

BESIDE YON STRAGGLING FENCE THAT SKIRTS THE WAY,
WITH BLOSSOMED FURZE UNPROFITABLY GAY,
THERE, IN HIS NOISY MANSION, SKILLED TO RULE,
THE VILLAGE MASTER TAUGHT HIS LITTLE SCHOOL;
A MAN SEVERE HE WAS, AND STERN TO VIEW;
I KNEW HIM WELL, AND EVERY TRUANT KNEW;
WELL HAD THE BODING TREMBLERS LEARNED TO TRACE,
THE DAY'S DISASTERS IN HIS MORNING FACE; FULL WELL THE BUSY WHISPER, CIRCLING ROUND,
CONVEYED THE DISMAL TIDINGS WHEN HE FROWNED;
YET HE WAS KIND, OR, IF SEVERE IN AUGHT,
THE LOVE HE BORE TO LEARNING WAS IN FAULT.
THE VILLAGE ALL DECLARED HOW MUCH HE KNEW—
'TWAS CERTAIN HE COULD WRITE, AND CIPHER TOO;
LANDS HE COULD MEASURE, TERMS AND TIDES PRESAGE,
AND E'EN THE STORY RAN THAT HE COULD GAUGE;
IN ARGUING, TOO, THE PARSON OWNED HIS SKILL,
FOR E'EN THOUGH VANQUISHED, HE COULD ARGUE STILL,
WHILE WORDS OF LEARNED LENGTH AND THUNDERING SOUND
AMAZED THE GAZING RUSTICS RANGED AROUND;
AND STILL THEY GAZED, AND STILL THE WONDER GREW
THAT ONE SMALL HEAD COULD CARRY ALL HE KNEW.

**From The Deserted Village**

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*(Continued from page 1)*

> In 1960, classroom teachers made up nearly two-thirds of the full time staff of American schools. By 1991, classroom teachers barely made up half of the full-time employees of American education; nonteaching staff had risen from 25.2 percent of the total to 46.7 percent in three decades. Between 1960 and 1980, local school districts increased their spending on administration and other nonteaching functions by 107 percent after inflation—a rate almost twice the increase in per pupil instructional expenses. During the same period, the proportion of money spent on teachers' salaries in elementary and secondary schools fell from more than 56 percent to less than 41 percent.
>
> Charles J. Sykes—*Dumbing Down Our Kids, pg. 228* (From US Department of Education, American Education: Making It Work, 1988 )

In America, the Village Schoolmaster who taught in their one-room schoolhouses from the colonial days into the eighteen hundreds were for the most part learned scholars, well-respected by their communities. Their authority over their students and the learning process was nearly absolute. They were indeed the Masters of their school.

In America during the 1900s, the village school was transformed into an education factory and the village schoolmaster into a skilled laborer. Somehow in this process of "modernization" the school teacher became isolated and alienated from the community and increasingly his or her base of power was eroded. A new stakeholder class, the professional educator, rose to power and the teacher fell out of sight, out of heart, out of mind and silent.

As the professional education bureaucracy grew in power and stature, more and more functions of the teacher were removed and eventually the teacher became a prisoner in his or her own classroom, forced to teach under new controls and conditions imposed from above and denied the ability to regularly interact and communicate with the community and with those making the critical decisions on educational policies and programs.

## *The Current Status of the American Teacher*

The degradation of the profession of teaching continues. At a time when the salaries of other professionals continue to grow dramatically, school teachers witness fewer and smaller raises. A recent study released by the American Federation of Teachers noted that the average teacher salary nationwide for the 1994-1995 school year was $36,744, which represented an average annual increase of 2.7 percent, a rate slightly below the rate of inflation

At a time when other professions are set apart with special privileges and perks, the schoolteachers are still denied even the simple privilege of a telephone on their desk. ❸and are given the privilege of eating twenty minute brown bag lunches with little or no time to network, collaborate or converse with other colleagues or professionals. In an age when other professions are encouraged to use the most advanced technologies in their profession, teachers are given outdated or second-hand technology for use in their classrooms by their students and not for their own research, course development or student assessments. ❹

Although most professions have experienced some decline in the levels of societal trust and respect due in part to the residue anti-authoritarianism of the sixties, the school teaching profession has endured the most dramatic loss of prestige. Even the youngest of students from a diversity of backgrounds and in increasing numbers are displaying major disrespect and contempt that never would have surfaced in the pre-1960s.. Parents are also less trusting and willing to accept the actions of teachers to the same degree that their parents were. Politicians and civic leaders are less supportive and less interested in teacher job satisfaction and more interested in student

*(Continued on page 10)*

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91A

# NSF—Networking Infrastructure for Education Grants

The National Science Foundation's Networking Infrastucture for Education (NIE) Program is a joint effort between the Directorate for Computer and Information Science and Engineering (CISE) and the Directorate for Education and Human Resources (EHR).

NIE competitions were conducted during FYs 1994 and 1995. In the FY 1995 competition, the NIE program awarded a total of $14.5 million, while leveraging an additional $8.7 million in cost-sharing from awardee consortia. Another $9.7 million was awarded in continuation grants and in collaboration with other NSF and federal programs.

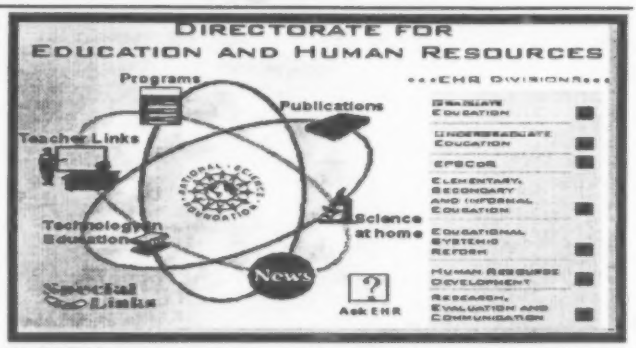
*Program Goals*

The NIE Program, under the direction of Nora H. Sabelli, supports the development of strategies for the appropriate use of networking technology to enhance teacher professionalization, student achievement, and school restructuring. It specifically seeks to:

- establish testbeds, implementation models and prototypes that explore the role of electronic networks (the Internet and others) in support of reformed education, or that demonstrate sustainable approaches to educational networking;
- support the R&D needed for large-scale, cost-effective implementation of educational networking, including infrastructure, policy, training, curriculum, reform, school organization, tools, materials, and mechanisms for technology transfer;
- strengthen collaborations between groups that are developing services, technical assistance and national connectivity and the larger educational communities, such as states and school districts;
- build on existing technological infrastructure in a manner that demonstrates effective educational reform and deployment to a wider community.

NIE also encourages planning grants to either:

- establish appropriate consortia and partnerships, or
- supplements existing awards for innovative and creative activities aimed at either integrating educational applications into networking systems, or integrating networking applications into systemic reform efforts.




**Visit NSF's Directorate for Education and Human Resources Site At: http://red.www.nsf.gov/**

*New Guidelines for 1996*

In the upcoming competition, NSF is encouraging proposals with innovative and proactive dissemination plans, strong evaluation components to document the impact of technology on educational reform, electronic libraries to house innovative materials, strong collaborative partnerships and that demonstrate full integration with national systemic reform efforts.

*The Size and Duration of Awards*

NIE plans to fund 3-5 awards yearly for each of the following categories:

- Policy Studies $25,000 to $100,000 per year
- Research and Development $250,000 to $750,000 per year for 1 to 3 years
- Demonstration and model sites $250,000 to $750,000 per year for 1 to 3 years
- Infrastructure and testbeds $500,000 to

*(Continued on page 6)*

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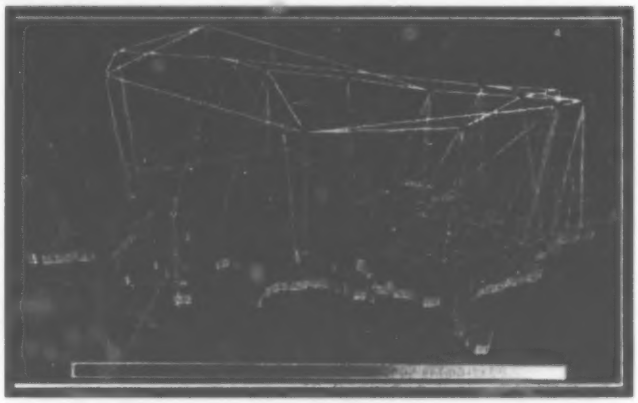
# On Creating A Democtratic Internet, Part Two—

*This is the second in a series of articles that will look at forces that have and are shaping the Internet. In NTN Volume 3, Number 4 we looked at how the US Department of Defense supported research that lead to the development of ARPANET and TCP/IP which became the core Internet Protocol. In this article we will look at the role the National Science Foundation has played in evolving a network to support all researchers including most recently K12 learners .*



Visualization study of inbound traffic measured in billions of bytes on the NSFNET T1 backbone for September 1991. Source: Visualization Study of the NSFNET Siggraph '92, Web Site: http://www.ncsa.uiuc.edu/SCMS/DigLib/text/technology/Visualization-Study-NSFNET-Cox.html

## *Supporting Research*

The National Science Foundation (NSF) is an independent agency of the United States Government that was created in 1950 with the mission and purpose:

To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense.❶

The National Science Foundation Act of 1950 gave the NSF the authority to initiate and support:

- basic scientific research and research fundamental to the engineering process,
- programs to strengthen scientific and engineering research potential,
- science and engineering education programs at all levels and in all the various fields of science and engineering,
- programs that provide a source of information for policy formulation,
- and other activities to promote these ends. ❷

From its inception the National Science Foundation has served to both support and lead American researchers in private and public institutions, and from all scientific fields and levels of scientific education. Knowledge transference, information dissemination, and connecting researchers and learners has been core to its mission

## *Building A Backbone Network*

In the mid-1980s, the National Science Foundation (NSF) decided it needed a backbone network to link its six nationally-funded supercomputing centers to one another as well as connect researchers from scattered cross the United States to the Supercomputing Centers. ❸ The first network, which was built by the Cornell Theory Center and the National Center for Supercomputing Applications (NCSA), consisted of only 56 kilobits/second. (Kbps) lines.

Almost instantly that backbone was insufficient to handle the rapidly expanding volume of data traffic. In 1987, NSF decided to build an even faster and expanded NSFNET. It awarded a contract to a IBM, MCI, and the Merit Corporation. This new T1 backbone, which was operational by July 1988, transmitted date at a rate of 1.5 megabits/second and connected thirteen sites. .

By 1989, the T1 backbone circuits were once again re-engineered to support an even faster rate of data transmission, 1.544 Mbps.

This new backbone system supported a rapid cultural migration of university researchers to the online communications and collaborations. Between July 1988 and July 1989, network traffic increased by an average of twenty percent per month.❹ and once again new capacity was needed.

By 1990, the NSFnet emerged as the dominant backbone network in the United States and the ARPANET, the network created by ARPA was phased out. ❺

In 1990, the Advanced Network Services, Inc. (ANS) was created to build a T3 backbone as a not-for-profit corpora-

*(Continued on page 5)*

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# The NSFNET, A Network For Learners

tion by the the partners awarded the NSF contract in 1987, namely IBM, MCI, and Merit Corporation. ANS completed its T3 (45 Mbps) backbone by December 1992. At that time, all NSF backbone were connected to this new T3 backbone and NSFNET became a customer of ANS. NSFNET had emerged as the predominant national research network.

### *Mid-Level Regional Networks*

One of the most significant aspects of the NSF networking program was its support of regional network development. These mid-level or intermediate networks connected to the backbone NSFNET. ❻ The mid-level service providers were the primary means by which most universities and research centers to access the NSFNET backbone. Their growth undoubtedly contributed to the overall explosion in NSFNET backbone traffic. From August 1988 to November 1992, NSFNET traffic grew from 195 million packets to nearly 24 billion. ❼

### *A Network for R&D*

The NSFNET Backbone was created to support not-for-profit research. With that intent, the NSF established an "acceptable use" policy that restricted the use of the Internet to non-commercial activities. ❽ Domain names were only allocated to organizations that had a U.S. government agency as a sponsor.

For many universities researchers, access to the NSFNET became as much a prestige as a matter of survival. Universities and researchers with access to the NSFNET gained advantageous in terms of access to new global sources of information as well as advantages in competition for government funding.

During the 1990s, the the number of NSFNET users, host machines, and the volume of traffic grew rapidly. NSFNET backbone traffic doubled annually from a terabyte per month in March 1991 to eighteen terabytes per month in November 1994. (A terabyte representing a thousand billion bytes.) ❾

### *The Road to Privatization*

Although the NSF had directed contributed to the development of the regional networks, it had made its intentions clear that the ultimate goal was that these providers become self-sustaining within a reasonable period of time.

In 1987, the first commercial access company, Uunet Technologies was founded. In 1989, the California Education and Research Network (Cerfnet) was created as a result of a proposal by General Atomics and the San Diego Supercomputing Center to the NSF, and in the same year, Performance Systems International (PSI) was spun off from the New York Educational Research Network. Uunet, PSINet and General Atomics created the Commercial Internet Exchange or CIX. These companies were the first to provide commercial access to the national backbone. For the first time companies and eventually individuals were able to access the same global resources as government-sponsored university researchers.

### *NAP Architecture*

In May 1993, NSF proposed a new network architecture that would ultimately ease the transition to a privatized network. The NSF proposed:

- the establishment of a number of Network Access Points (NAPS) defined as a high speed network or switch to which a number of networks can be connected via routers for the purpose of traffic exchange and interoperation.
- One or more NAP Manager organizations to arrange for and manage NAPS.
- Routing Arbiter (RA) to provide for equitable treatment of the various network service providers with regard to routing administration and will provide for a common database of route information to promote stability and manageability of the network.
- Very High Speed Backbone Service Providers (vBNS) to provide for high speed interconnection of NSF Supercomputing Centers; the development of a national high performance computing environment; applications involving distributed high performance computing and isochronous visualization; and connection to the NSF-specified NAPS. ❿

On the evening of April 30, 1995, the NSFNET backbone was silently and unceremoniously decommissioned. A fully commercial system of backbones has replaced the government sponsored NSFNET. NSF continues to support the connections of research and education institutions to the Internet, new applications of networking tools, international connectivity, and and continues to support research on high bandwidth connectivity.

### *The Impact of NSFNET*

The NSF played a major role in evolving a network architecture that could support the growing needs of an informatized and online society. The NSF also helped

*(See NSFNET on page 6)*

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# NSF NET (Con't)

# NSF's NIE Program (Cont't)

*(Continued from page 3)*

$1,500,000 per year for 1 to 3 years.

Planning Grants should not exceed one year and are expected to range from $25,000 to $100,000..

## *Further Information*

Proposals should be prepared and submitted in accordance with the guidelines provided in the NSF brochure, Grants for Research and Education in Science and Engineering (GRESE), NSF 92-89, October 1992. Copies of the most current edition of this publication are available at no cost from:

National Science Foundation
Forms and Publications, Rm P15
4201 Wilson Blvd.
Arlington, VA 22230
(703) 306-1130
pubs@nsf.gov (Internet)
pubs@nsf(Bitnet)

## *Reference Web Sites:*

National Science Foundation
http://www.nsf.gov/

Networking Infrastructure for Education (NIE)
http://www.ehr.nsf.gov/EHR/RED/NIE/index.html

NIE Program Guidelines
http://www.ehr.nsf.gov/EHR/RED/NIE/guides.html

NIE Awards
http://www.ehr.nsf.gov/EHR/RED/NIE/guides.html

Division of Research, Evaluation, and Communication (REC)
http://www.ehr.nsf.gov/EHR/RED/index.html

The Directorate for Education and Human Resources (EHR)
http://www.ehr.nsf.gov/newfrnt.map?159,30

## *Examples of 1995 Awardees:*

New Planning Grant—**Claude McMillan–University of Alaska, Fairbanks and Fairbanks North Star Borough School District–'Partners in Science–$253,250: to further math and science learning through electronic networking in rural Alaskan school districts, and among isolated homeschoolers. The project will link practicing scientists from higher education, government, and industry with teachers and students, using the latest information networking technology. The project will also create a virtual classroom model to support remote professional development for isolated and rural teachers.**

Startup Grants/Supplements—**Ferdi Serim–Princeton Regional Schools, Princeton, N.J.–"Online Internet Institute"–$177,157: to create a virtual infrastructure on the Internet to provide leading Internet-using educators, proponents of systemic reform, and teachers desiring professional growth with hands-on experiences that will enable them to integrate the Internet within their classrooms, and support their peers in doing the same.**

Multi-Year Awardees—**Lynn Churchill–University of Montana–"The Network Montana Project: Development of Rural Networking Infrastructure In Support of Systemic Change in Mathematics and Science Education."–$2,520,000 over 36 months: to develop flexible, sustainable approaches to a systemic educational network infrastructure. The project includes a wide range of partners who will develop a rural community networking model that infuses technology into ongoing systemic educational reform efforts.**

**Elliot Soloway–University of Michigan–"A Digital Library for Middle Schools: Supporting Authentic Science Investigations"–$1,413,000 over 36 months: to build the Middle Years Digital Library, which will provide an Internet source for access to broad range of information resources, including traditional books, magazines, journals, data sets, scientific instruments, computer-based research tools, and collaboration with peers and mentors. The project will demonstrate the viability of electronic libraries and the role such libraries will play in the reform of science education.**

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## 1995-1996:
## A Year to Explore Space and Cyberspace

# *Live from...the Hubble Space Telescope*

On March 14, 1996 students all across America will participate in a cyberspatial outer space event. Student "Virtual Co-Investigators" will watch as the Hubble Space Telescope (HST) performs astronomical observations which they themselves have helped design along with America's foremost space researchers. On April 23, 1996 the raw data will be published, on-camera and on-line, again as part of a live national television broadcast, freely available over public television and NASA-TV.

Through a special relationship with the Space Telescope Institute (STScI), which operates the Hubble Space Telescope for NASA and the European Space Agency, *Passport to Knowledge* has been assigned 3 orbits of the Hubble Space Telescope for original observations to be researched, planned, executed and published as part of the *Live from the Hubble Space Telescope* project.

### *Preparing for the Great Planet Debate*

By December 15, 1995, a decision must be made about which planet the HST will observe during its three orbits for the Passport to Knowledge allocation. Students are to participate in this decision.

In March, when the HST will be performing the observations, 4 planets—Jupiter, Uranus, Neptune, and Plato—will be available targets for study. Students are now conducting on-line research on these four planets so that they can offer their educated opinion as to which planet or planets would be the best target for the Hubble Telescope. The students are investigating the planets using valuable online resources including web sites and online discussions with four of America's most distinguished space scientists who are serving as "Planet Advocates". These scientists include: Professor RETA BEEBE of New Mexico State for Jupiter; Dr. MARC BUIE of Lowell Observatory, Flagstaff, Arizona for Pluto; Professor HEIDI HAMMELof MIT for Neptune, and Professor CAROLYN PORCO of the University of Arizona for Uranus.

A final determination will be made by a group consisting of educators working with Passport to Knowledge, astronomers from STScI and student representatives communicating via the Internet.

### *Following the Debate*

In January through February 1996 the consensus plan will be transformed into an operational blueprint. Students will be able to go online and monitor the planning process.

March 14, 1996 1:00-2:00 pm Eastern—Live from the Hubble Space Telescope observations will take place, and be broadcast in a live one-hour program Tuesday April 23, 1996—1:00-2:00 pm Eastern, the final Live from HST program will report of the results of the student-suggested observations, and will invite live interaction by video, phone and e-mail between the students and the astronomers.

### *ONLINE RESOURCES*

For further information about this project, send email to:

***listmanager@quest.arc.nasa.gov***

In the message body write

***subscribe updates-hst***

The Web site is located at:

**http://quest.arc.nasa.gov/livefrom/hst.html**

The web contains additional background on the project, and pointers to further print and on-line resources to help students research the choices that face them.

If you would like to participate in the choice and "The Great Planet Debate", send email to

**listmanager@quest.arc.nasa.gov**

In the main body of the message write:

**subscribe discuss-hst**

There will be detailed commentary by each "Planet Advocate" on the candidate planets, suggestions about what 3 orbits could study, explanations of what unique contribution HST can make, and -- on a more personal level -- why they themselves became astronomers.

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# The Connected Learning Community:

On November 28, 1995, Bill Gates, chairman and CEO of Microsoft Corporation, presented his vision of the *Connected Learning Community* to more than 700 national education leaders and students who gathered at Georgetown University in Washington D.C. He described how advanced technology is being used to create exciting and engaging learning for all ages of learners but especially for K-12 learners. He also announced some new initiatives designed to help educators use this new technology to create new schools of learning.

U.S. Deputy Secretary of Education Madeleine Kunin joined gates in this forum hosted by The Reverend Leo J. O'Donovan, President of Georgetown University. Kunin emphasized the importance of technology in reaching the nation's education goals. "Bringing the full fruits of new technologies to our schools depends on expanding access to the information highway, developing better tools and educational software, and building new alliances with the private sector," Kunin said. "Technologies provides us with a new unique opportunity to improve teaching and learning. Above all, our nation needs to do a much better job with technology training, including developing teachers' professional skills with these new tools."

## *The Connected Learning Community*

Gates believes that multimedia and networking technologies are creating new opportunities for learning that will redefine learning as well as reshape the current structure of learning. In this new environment, students will have access to the global information through personal computers, and students, teachers, parents and the extended community will be connected together.

Learners within schools will learn in a more engaged and interactive manner with the benefit of the new technology. The technology supports a more individualized approach to learning and at the same time will allow the opportunities for the engaged learner to share their knowledge with their classmates and work together on collaborative projects.

Teachers will grow more important as they become facilitators and coaches. They will be able to use the technology not only to offer students new ways of learning but also to maintain student records and profiles.

Parents connected to the schools will become more involved in their child's education as well as more involved in the school activities. The new lines of communication between parents and teachers will help them to better work together in creating the best possible environment for the child at school and at home.

Connecting with the outside world offers new opportunities for all. Teachers can share their best practices, curriculum, projects, and mentor colleagues. Students can access global resources and contact experts in all sorts of areas of interest.

Gates showed an excellent short video that featured five schools exemplifying innovative uses of technology in education including: Blackstock Junior High School, Oxnard, CA; Christopher Columbus School, Union City, N.J.; Sunman Elementary, Sunman, IN;and Thomas Jefferson Science and Technology Magnet High School in Fairfax County, VA.
This video showed students and their teachers at all grade levels using technology with purpose and excitement.

## *Initiatives to Support Use of Technology in Education*

Gates declared Microsoft's commitment to help build this new learning community. Microsoft will focus on two key needs:

- facilitating three-way connections that bring together schools, homes and the world;
- helping teachers find find value and rich educational content in the information available via the Internet.

### The Microsoft Parent-Teacher Connection Server

Microsoft is building a comprehensive set of software to facilitate home-school communications and simplify network administration for schools. The Microsoft Parent-Teacher Connection Server, an extension to the Microsoft Windows NT Server, will be available free to schools in the Spring. Microsoft is working with Compaq Computer Corporation, Bell Atlantic and Pacific Bell Corporation to set up computer systems for the Microsoft Parent-Teacher Connection Server, and provide schools with network access, support and training.

### The Global SchoolNet Foundation Partnership

Gates announced a new partnership with The Global SchoolNet Foundation to develop a virtual center for teachers on the

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# A Vision for Technology In Education

*(Continued from page 8)*

web. Microsoft and GSH will work with experts in key curriculum areas to develop critical resources areas, including a repository for lesson plans and classroom tools, a teacher resource center with information standards, and a library of innovative classroom projects.

The Road Ahead Program for Schools

To demonstrate his personal commitment to education, Gates announced that the proceeds from the sale of his new book, *The Road Ahead*, will fund school technology programs in 22 communities across the United States through the National Foundation for the Improvement of Education (NFIE). The two-year interdisciplinary initiative is designed to explore how new technologies can be used to enhance the learning process. NFIE will evaluate and document the results of these initiatives.

Libraries Online

Microsoft and the American Library Association will partner together in a one-year, $3 million initiative to research and develop innovative approaches for extending information technologies to underserved populations.

Nine libraries will receive cash grants, staff training, computer hardware, Microsoft software and technical support to address specific community needs. At the end of the year, an advisory committee will evaluate the projects and make recommendations for future strategy.

*Further Information*

A copy of Bill Gates' address can be found on the Focus on K-12 area in Microsoft's Web home page, http://www.microsoft.com/k-12/vision

For online information on Microsoft's K-12 Programs: http://www.microsoft.com/k12

Bill Gates, *The Road Ahead* (Viking, New York, 1995, pp. 286 with a CD ROM,$29.95)

**The Global Schoolhouse**
**http://www.gsn.org**

**The newly revised Global Schoolhouse Web site is now divided into sections that follow Bill Gates's vision of The Connected Learning Community.**

**The Website Contents are:**

**Teacher—Teacher Section**
**Teacher—Classroom Section**
**Teacher—Community Section**
**Classroom—Classroom Section**
**Classroom—Community Section**
**Community—Community Section**

**The site also contains the Internet Project Registry and information on the Global SchoolNet Foundation**

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# The High Costs of Silencing Our Teachers

*(Continued from page 2)*
performance. Perhaps most revealing most critical commentary and research on America's school system only tangential considers teachers ❻

## *The Silent Stoic*

The defrocked, defiled, defrauded and dumped upon American teacher continue to do the best job they can in their stoic silence, adapting new teaching methods tossed to them from above, adapting new technologies passed to them with little or no training, displaying their expertise, their individuality , their humor, their dignity and grace and their creativity to those who matter most—their students. Somehow they tolerate the misdirected anger of parents, the lack of financial incentive, the lack of managerial support and vision, and the disregard and contempt of their colleagues in the colleges and universities and sometimes even in their schools. Through it all, and in spite of it all, they continue to do what only they can do —touch the future one child at a time.

Ironically, to some degree, the teacher's sense of professionalism has contributed to the decline and dismissal of the teacher as a real stakeholder. The teacher has been willing to "get the job done" without disloyalty to the educational bureaucracy or disservice to their students and the community. They live in a world of stark economic and social reality where they can see firsthand the impact of sociey's priorities and policies on the next generation. They understand it could be better but also understand it could be worse and so they compromise and do the best they can with what they have to make it better for their students. Most are frustrated, overworked, tired and bewildered by a complex educational system where politics rules the day more often than common sense and academic sense.

Teachers have not as a group stood up, spoke up, spoke out, spoke honestly, and spoke their minds and hearts to the public, to the politicians, or to the educational bureaucrats. For the most part they have simply endured and at times have turned on each other before turning on the system that has sequestered them.

That silence has masked problems in the classroom and has masked the complexity of America's crisis in education. It has allowed experts from the left, right and center to debate what is right or wrong in the classroom and how it can be made better without the benefit of their observation and knowledge. It has contributed to the mistrust of parents and the community and ironically it has even at times allowed the bureaucracy to use the teacher as the scapegoat for ineffective policies and poor management.

## *Beyond Reproach– Of Course Not*

All of this is not to say that all teachers are saints and the teaching profession perfect. There are many excellent teachers and others who are just passing time and occupying a space. The teaching profession is no different in this respect than any other profession. One of the necessary challenges of the teaching profession is to establish a professional standard and devise objective measures of accountability and success.

## *The High Cost of "Dancing" Our Teachers*

As a society, America is paying a price for the way it has treated its teachers and part of that price is the instability of our educational institutions and the ineffectiveness of much of the educational reform efforts of the last several decades. One may argue that American students are declining or not declining but it is certain with the numerous reform efforts of the last several decades, the increasing numbers of books released criticizing the American public school system , and the serious erosion in public confidence that something is not working as well as it might. Clearly the system is in transition and quite possibly in crisis.

It would be speculative hindsight to suggest that America's schools might have evolved more smoothly had teachers had a more significant voice in the process but it is certain that the lack of teacher input has contributed to some policy failures and system inefficiencies. Teachers in the classroom have the benefit of seeing firsthand whether or not new teaching methods are effective. They may not grasp the macro significance and be able to quantify trends but surely they can evaluate at the basic level what works and what doesn't with their learners. The more experienced teachers can begin to grasp intuitively what works best with which kinds of students and what doesn't work.

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# The Technology of Liberation and Change

*(Continued from page 10)*

## *The Crisis in Teaching*

Sadly, many of the best and brightest of our teachers are leaving the profession and many of our brightest would-be teachers are turning to other professions. Teachers may now be on the lowest rung of the American professional education bureaucracy but in the classroom learning process, only the teacher and learner count. If these trends continue, we will face a serious shortage of the very kinds of teachers we need to bring stability to the institutions of learning and help structure new schools of learning.

## *The Favorable Winds of Change*

Fortunately, in recent years teachers have found a way to break out from the prisons of their classrooms, schools and school systems. They broke out initially for the benefits of their students but are now finding that these technologies can also help themselves and their profession grow. These teachers have seized upon the global networks and are working side-by-side with their students to apply these advanced technologies to the learning process in remarkable ways that are beyond the imagination of even the designers of this technology .

A recent OTA study concluded that:

- Student enthusiasm for technology is a powerful incentive for teachers to use it. Teachers who are technology users often report that technology can make learning more relevant to "real" life and more engaging and motivating to students.

- Increased communication is one of the biggest changes technology offers classroom teachers. Technology, particularly new telecommunications options, can transcend walls of isolation that plague the profession and allow teachers to converse with colleagues, the school office, experts in the field, parents, and others outside the boundaries of the school.

- Teachers who are leader in telecommunications and other technologies are demonstrating how technology can be a vehicle for continuing formal and informal professional development. Many technology-using teachers report a renewed sense of professionalism when they take part in such activities, especially since they have little time for face-to-face collegial activity outside the classroom. Telecommunications can provide a means to give and receive support from colleagues and enable teachers to expand their knowledge in all content areas.❽

An earlier study concluded:

Networking alone cannot change the profession and culture of teaching, but it can open new windows of opportunity. Increased and regular outside communication, greater and easier access to new information sources, and greater opportunities to publish and to participate in professional discussions can induce such change. Outside communication helps to augment a practicing teacher's knowledge of new pedagogical developments, support direct communication with university researchers and other practitioners, and increase his or her self-confidence as a teaching professional and lifelong learner. ❾

## *The Return of the Village Schoolmaster*

Their numbers are growing, their voices are louder now, their confidence has grown, and they have become a force that will not be silenced or stopped. These networking classroom teachers like Stephanie Stevenson, Sally Laughon, and Marilyn Wall are presenting in professional networking conferences such as INET, the annual meeting of the Internet Society, Tel-Ed, an Annual Meeting of the International Society for Technology in Education's Sig Tel group, and NECC, the National Educational Computing Conference ❿ and they are like Pam Burish, Mark Ahlness, Marjorie Duby publishing their work and their students' work on the world wide web for the entire world to see.⓫ They are also speaking out like Bonnie Bracey, a teacher who sits on an US Interagency Task force on Networking, and Leni Donlan as moderators of educational listservs, like Mary Ellen Verona establishing Virtual high schools,⓬ and like Ferdi Serim founding Online Internet Institute's for teachers, ⓭ and in their noisy and active classrooms teachers like Alice Allnutt, April Phillips, Steve Gunter, Joyce Perkins, Jan Meizel, and Betsy Frederick are together with their students taking the first bold steps to new worlds of learning.

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# The Global Village School

*(Continued from page 11)*

## *Building The Global Village School*

Networking teachers and their students are leading the way to a new system of learning that will be far different than the factory model of the 1900s and in some ways more like the Village Schoolhouse of the earlier centuries to the degree that these schools will work with the community and be part of it and not isolated from it. Already we are seeing the emergence of new learning colonies that support new kinds of learning and instruction. The I*EARN project has demonstrated that learners from from diverse cultural backgrounds and speaking different languages can come together with their teachers to share experiences, build knowledge and work to solve significant problems confronting the global village community.[12]

*There is an often-expressed fear that technology will replace teachers. I can say emphatically and unequivocally, IT WON'T. The information highway won't replace or devalue any of the human educational talent needed for the challenges ahead: committed teachers, creative administrators, involved parents, and, of course, diligent students. However, technology will be pivitol in the future role of teachers.*

Bill Gates, The Road Ahead, (New York, Viking, 1995) p. 185

## *REFERENCES:*


❶ Charles J. Sykes, *Dumbing Down Our Kids, Why American Children Feel Good About Themselves But Can't Read, Write, Or Add* (St. Martin's Press, New York, 1995) p.25

❷ Oliver Goldsmith was an Irish poet who lived from 1728 to 1774. His more notable poems were The Vicar of Wakefield, The Traveler, and The Deserted Village. *A Treasury of Great Poems, English and American* (Simon and Shuster, New York, 1942) pp. 574-578

❸ *Teachers' Salaries Rose 2.7 Percent*, Washington Post, November 22, 1995, p. A7

❹ Ronald E. Anderson, *Computers in American Schools 1992: An Overview* (IEA Computers in Education Study, Department of Sociology, University of Minnesota, Minneapolis, Minnesota, 1993) pp.12-27, pp. 45-54; U.S. Congress, Office of Technology Assessment, *Teachers and Technology: Making the Connection*, OTA-EHR-616 (Washington D.C.: U.S. Government Printing Office, April 1995) pp 1-2, pp. 89-118; Educational Technology Trends, Public Schools, 1992-93 (Quality Education Data Inc, Denver, CO, 1992)

❺ Charles J. Sykes's *Dumbing Down Our Kids, Why America's Children Feel Good About Themselves but Can't Read, Write, or Add* ( 341 pp. New York; St. Martin's Press); Lewis Perelman, *School's Out, A Radical New Formula for the Revitalization of America's Educational System.* (368 pp. New York, Avon Books) Sykes and Perelman are examples of expert critics who focus on the student and student needs, interests, and problems with only tangential references to the impact of the system on the teacher and the teacher-learner, teacher-community relationship.

❻ U.S. Congress, Office of Technology Assessment, *Teachers and Technology: Making the Connection*, OTA-EHR-616 (Washington D.C.: U.S. Government Printing Office, April 1995) pp. 49-50

❼ *Building Consensus/Building Models:A Networking Strategy for Change* (Federation of American Research Networks, Inc. and Consortium for School Networking, March 1994; supported by NSF Grant No. RED-9254947) p. 13

❽ INET'95, David Thomas and Stephanie Stevenson, *The Internet and K-12 Mathematics and Science Reform*, published in the INET'95 Proceedings Volume I (Internet Society, Reston, VA, 1995)pp.365-373; TEL ED'93: Sally Laughon and Jim Swanson, *Oh! Telecommunications: Projects That Produced Results and Why*, published in Tel Ed'93 Conference Proceedings (SEDL, Austin, TX, 1993) p. 259; NECC'94 Marilyn Wall, *New Forms of Communication Are The Heart of the Revolution*, Abstract published in NECC'94 Conference Proceedings (ISTE, NECA, Eugene, OR, 1994) p.228. Many other practioners from the classroom participated in these conferences and others, and their numbers are increasing.

❾ See Pam Burish (Eakin School) –http://www.tbr.state.tn.us/~burishp/eakinhp.html; Mark Ahlness (Arbor Heights ES) http://www.halcyon.com/arborhts/arborhts.html; Marjorie Duby (Lee Elementary School) http://www.wentworth.com/classweb/BostonKidWeb.html

❿ Mary Ellen Verona (Maryland Virtual High School) See: http://goober.mbhs.edu/mvhs.html

⓫ Ferdi Serim (OII) See http://prism.prs.k12.nj.us:70/0/WWW/OII/OIIhome.html

⓬ Jim Cummins and Dennis Sayers, *Brave New Schools, Challenging Cultural Illiteracy Through Global Learning Networks* (St. Martin's Press, New York, 1995)


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# INFOBYTES

## CHANGES AHEAD FOR THE GEOMETRY FORUM

The Geometry Forum is about to become the Math Forum.

A new section will be added to web site called Web-Based Units and Lessons. It features a small but growing collection of resources created by Forum participants and staff. These resources offer substantive, hands-on materials for math classrooms.

The Math Forum will explore how web technologies with helper applications such as the Geometer's Sketchpad, Hypercard, HyperStudio, Mathematica, and QuickTime movies - may revolutionize the way mathematics is taught.

The Forum home page can be found at http://forum.swarthmore.edu/.

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## WHITE HOUSE LAUNCHES TECH CORPS

The Tech Corps is a grassroots, volunteer organization designed to help schools prepare students and teachers for the 21st century by bringing the technical expertise of thousands of men and women into America's schools.
>
President Bill Clinton, challenging Americans to help bring the power of computer technology into the classroom, said, "This goal cannot be achieved by government fiat. It can only be met by communities, businesses, governments, teachers, parents and students joining together. A high-tech barn-raising."
>
Tech Corps volunteers will work with grade K-12 teachers and school administrators in their local communities to provide assistance with technology planning, technical support and advice, staff training, mentoring and classroom instruction.

The national organization will provide guidance and training for state chapters. State Tech Corps chapters will operate autonomously and will identify and match their volunteers to local projects according to interests, skills and school districts' priorities.
>
The Tech Corps build upon a program started in Massachusetts that has successfully completed pilot projects in twelve communities and will expand this fall to 47 school districts representing more than 60 communities.

The Tech Corps is incorporated as a private, non-profit organization and is overseen by a board of directors which includes professionals from the high tech, telecommunications and education sectors.
>
For more information on the Tech Corps or to register for the Tech Corps Chartering Conference, visit the organization's Internet World Wide Web site at http://www.ustc.org. >
Contacts:

Tech Corps National Office
Web Site: http://www.ustc.org
>
Contacts:
Karen Smith
(508) 620-7749
ksmith@ustc.org
Gary Johnson
garyj@ustc.org

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## MICHIGAN DEPARTMENT OF EDUCATION CHANGES ITS WEB

The Michigan Department of Education has just posted it's second generation of World Wide Web pages.

The NEW address is http://www.mde.state.mi.us/>. If you don't have WWW access their Gopher is at gopher://gopher.mde.state.mi.us/

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## STUDENT NEWS BUREAUS

Young people in Washington, D.C., Baltimore and Philadelphia can now use electronic news bureaus to exchange views on critical issues with their peers worldwide, as the result of a project launched by Bell Atlantic and Children's Express.

Children's Express is an award-winning, national non-profit youth development organization that uses teen journalism to give children a significant voice through print, electronic, and broadcast reports.

The new project, sponsored by the Bell Atlantic Foundation, will establish eight interactive kiosks in the mid-Atlantic region that will serve as field news bureaus for Children's Express.

At these interactive sites, young people use computer links to "voice" their opinions to Children's Express reporters. Sites at boys and girls clubs provide electronic mail for idea exchanges and story suggestions. At community center sites, a computer screen asks a question to which young people can respond by using a keyboard. Later this year, a video conference roundtable discussion also will be held at one of the interactive sites.

The Children's Express news service is staffed with reporters aged eight through 13 and editors aged 14 through 18. Their stories and analyses of issues are syndicated to newspapers around the world. Young people using the new interactive sites will be communicating directly with reporters and editors at the Children's Express New York and Washington central news bureaus.

The new interactive sites are located at the Rockville Library and the Rockville Boys and Girls Club, Rockville, Md.; the Wheaton Library, Wheaton, Md.; the Silver Spring Boys and Girls Club, Silver Spring, Md.; the Bald Eagle Recreation Center, Washington, D.C.; and, the Winnet South Philadelphia Community Center, Philadelphia, Pa. Other sites to be developed include the R.W. Brown Community Center, Philadelphia, Pa.; and, the University of Maryland Medical Center-Teen Room, Baltimore, Md.

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# NTN CYBERMALL

## St. Martin's Press Releases Brave New Schools, Challenging Cultural Illiteracy Through Global Learning Networks

In a season when most of the newly-released books are painting a grim picture of America's education system and the school environment, *Brave New Worlds: Challenging Cultural Illiteracy through Global Learning Networks* offering a real potential for positive evolution of schools into the New World of the Information Age. *Brave New Schools* offers a vision of how networking technology can be used to engage learners in a way that not only makes them better learners but also better citizens of the globe. Jim Cummins, a Professor in the Modern Language Centre of the Ontario Institute for Studies in Education, Toronto, Canada and Dennis Sayers, Director and Assistant Professor of Bilingual Education in the Multilingual/Multicultural Studies Program at New York University have put together a book with a heart. mind, soul and destiny. If you are interested in educational reform that is more than a buzz word or a banner for some hidden political agenda, *Brave New Worlds* is the book you've been waiting for. (Jim Cummings and Dennis Sayers, *Brave New Worlds*, St. Martin's Press, New York:, 1995, pp.374, ISBN 0-312-12669-7, $23.95)

## Math Projects In The Computer Age, Projects for Young Scientists by David A. Thomas

Professor Dave Thomas of Montana State University has written a book that is a must read for any high school teacher of mathematics or old student, like myself, who would like to revist mathematics in a new and exciting way. Dave introduces a wide variety of mathematical ideas and puzzles that provide students with the basis for an exciting and fun exploration of linear algebra, graph theory, projective geometry, fractal geometry, and umber theory. The graphics used in the book are definitely worth viewing and were generated on supercomputers at the National Center for Supercomputing Applications. Dave is an expert in using visualization tools and imagery analysis with young mathematicians and has pioneered the use of the Internet in teaching mathematics and science. (David Thomas, *Math Projects In the Computer Age*, Projects for Young Scientists, Franklin Watts, New York, 1995, pp.176, ISBN 0-531-11213-6)

## BOXER TRIGONOMETRY
## An Interactive and Fun Way To Learn Trigonometry

Boxer Trigonometry is the first title in the Boxer Math Series, and augurs well for the future of Boxer and interactive mathematical study. This program is a hands-on, interactive tutorial designed to give students an intuitive and computational understanding of trigonometry. The Boxer interface is very user friendly and will entice even a technology-phobic adult to explore the complex world of trigonometry. The presentation of material is engaging and the learner is given some real world examples of application. The program is well thought out and provides the student with a comprehensive understanding of the material and nurtures problem solving skills. Boxer will complement the series with a Boxer Math area on one of the major online services and/or the Internet. Boxer Inc. is developing a similar program for geometry, algebra, and calculus.

For more information about the series contact:
Boxer Inc.
100 2nd St NW Studio 10
Charlottesville, VA 22902 USA
+1 804-977-4125, Fax +1 804-977-0736, E-Mail JHB@BOXER.COM

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# MARCH 1996

**4-6 March. Midwest Education & Technology Conference. 13th Annual**
Cervantes Convention Center, America's Center [illegible]. For more information [illegible] Conference Coordinator [illegible], St. Louis, MO [illegible] 4-692-1250.

**13-16 March. SITE 96, the 7th International Conference of the Society for Information Technology and Teacher Education.** Phoenix, Arizona. For more information write to:
SITE 96/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, or call +1-804-973-3987, or FAX: +1-804-978-7449, or send e-mail to: AACE@virginia.edu.

**17-20 March. ICTE'96 Technology and Communications: Catalyst for Educational Change.**
New Orleans, Louisiana. ICTE is an international conference. Delegates from over forty countries, and from many different positions in the world of education and training will attend. More than half of those attending will make some sort of presentation and those presentings papers will be published in the Conference Proceedings. The Conference is divided into eight sub-themes [illegible] articular aspects [illegible] ogress in technology [illegible] including current [illegible] e information [illegible] ion and training [illegible] ions and private [illegible] nformation:

ICTE
Post Office Box 195349
UTA Station
Arlington, TX 76019-0001 USA
Telephone: +1-817-534-1220;
Fax:+1-817-534-0096;
E-mail: icte@icte.org;
World Wide Web: http://www.onramp.net/~icte

## FIRST CALL FOR PARTICIPATION IN WEB NET'96 WORLD CONFERENCE OF THE WEB SOCIETY October 16-19, 1996 * San Francisco, CA USA

**Submission Deadline: March 1, 1996**

WebNet-96 – the first World Conference of the Web Society is an international conference, organized by the Association for theAdvancement of Computing in Education (AACE). This annual conferenceserves as a multi-disciplinary forum for the dissemination of informationon the research, development, and applications on all topics related tothe use, applications and societal and legal aspects of the Web in its broadest sense, i.e. encompassing all modern tools to peruse the Internet.

This conference is a must for all who plan to use the Internet for informational, communicational or transactional applicationsor, who are currently running or planning to run servers on the Internet.

WebNet is the annual conference of the Web Society that was founded in 1995out of a concern that an organisation addressing the application aspects of the Web and representing a lobby for Web users independent of specific platforms and without the domination of commercial organisations was needed.

WebNet-96/AACE
P.O. Box 2966
Charlottesville, VA 22902 USA
E-mail: AACE@virginia.edu; 804-973-3987; Fax: 804-978-7449; http://aace.virginia.edu/aace

# MAY 1996

**2-4 May. 1966 10th Annual VSTE Technology Conference**
Hotel Roanoke and Conference Center, Roanoke, Virginia. May 2 will be a full-day of hands-on workshops and May 3rd and 4th will be general sessions geared towards educators who work in the classroom and administrators who work with those educators. For more information contact:darkin@pen.k12.va.us or call +1 804-320-3424

# JUNE 1996

**11-13 June. NECC'96, Call of the North**
Minneapolis Convention Center, Minneapolis, MN. Hosted by Technology and Information Educational Services (TIES) and Sponsored by National Educational Computing Association in cooperation with University of Minnesota, St. Cloud University, and Twin [illegible] more information [illegible] to:
NECC [illegible] Lake Road [illegible] ille, MN [illegible]

25-28 [illegible] INET [illegible] Internet: [illegible] ociety Now, Montreal [illegible]

INET'96 the [illegible] erence of the Internet Society focusing on worldwide issues of Internet networking will be held 25-28 June 1996 in Montreal, Canada. This conference brings together those extending the reach and use of Internet networks. Participants include those developing and implementing Internet networks, applications, and policies for worldwide infrastructure development. The development of Internet networks in an ever wider variety of social, cultural, economic and linguistic contexts is also a focal point of this conference.

The INET'96 Conference will also be preceded by a tentative two day program bringing together active Kindergarten thru Secondary School Internet innovators from around the world to share experiences and learn new advanced tools and collaboration techniques.

For information and general questions about the Primary and Secondary School Workshop please send E-mail [illegible] org

For [illegible]
Email [illegible]
Tel: [illegible] 8
Fax: [illegible]
Addr [illegible]
Inte [illegible] cre-tari [illegible]
1202 [illegible] Dr., Suit [illegible]
Reston VA 22091USA
URL: http://www.isoc.org/conferences/inet96/

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# Cisco Announces The Virtual Schoolhouse Grant Program

In late October, Cisco Systems, Inc. announced the Virtual Schoolhouse Grant Program which is designed to help schools nationwide connect to the Internet. Each year, Cisco will award products, service and training to selected single-site, K-12 schools for curriculum-based Internet connections. .

"The need for networing in schools today is a fundamental part of the educational infrastructure, just like good lighting and adequate facilities. As information on the Internet grows each month, resources for use in public schools have increased phenomenally," said John Morgridge, chairman of the board of Cisco Systems. "The Virtual Schoolhouse Grant is devised to expedite the implementation and support of networks in educational institutions."

Grants are to be used for curriculum,-based applications such as Internet access and in-classroom learning. Selected schools will receive eapproximately $10,000 in router products, service , and training. A total of $500,000 will be allocated annually to this grant program.

Preference will be given to single-site schools that:

- Have developed a clear, well-articulated technology plan for using the products and services for curriculum-based applications.
- Demonstrate an understanding of the technology infrastructure needed to achieve their technology visions and implement their plan.
- Demonstrate a personnel and financial commitment to developing this infrastructure, including adequate funding to cover expenses for all non-Cisco equipment and services required to establishing an Internet connection for at least two years.

Applications must be received by March 1, 1996 to be considered for the 1996 awards. The Awards will be announced at the National Education Computing Conference (NECC) in June.

Interested schools can obtain an application by calling Cisco's educational hotline at +1 (408) 526-4226 or sending e-mail to edu-grant@cisco.com. Applicants with Web access can head to: http://sunsite.unc.edu:80/cisco/grant.html and can download a grant application and brochure in various versions including Word 5.0 for Mac, in HTML and in ASCII text.

Cisco Systems is the leading global supplier of enterprise networks, including routers, :LAN and ATM switches, dial-up access servers and network management software.

NETTEACH NEWS IS THE CHOSEN NEWSLETTER FOR PIONEER NETWORKING EDUCATORS WORLDWIDE. IT PROVIDES A FORUM FOR THE EXCHANGE OF INFORMATION ABOUT HOW ADVANCED NETWORKING TECHNOLOGIES ARE CHANGING SOCIETY, AND IN PARTICULAR THE WAY WE TEACH AND LEARN AND DEAL WITH ONE ANOTHER. IT IS INTENDED AS A PLATFORM FOR MANY VARIED PERSONAL AND COLLECTIVE TRAVELS TO NEW NETWORKED EDUCATIONAL WORLDS AROUND THE GLOBE AND A PATHWAY TO EMERGING GLOBAL LIVING LEARNING VILLAGES.

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Connecting Learners Around The Globe

# NETTEACH NEWS

VOLUME 1, NUMBER 7 DECEMBER 31 (1995

## THE INTERACTIVE SCHOOL

### *VISIONS OF TEACHING & LEARNING IN THE JAVA AGE*

The Age of Interactivity is dawning, spawned by the rapid proliferation of interconnected global computer networks and the development of computer software that supports interactivity and virtual collaborations, the most powerful being the JAVA programming language.❶ This new technology is transforming the structure of school, the composition and character of classrooms, the role of teacher and the nature of learning across the globe. The Interactive School is emerging and challenging the paradigm of the "traditional" school of the Post-Modern era.

In the Interactive School teaching is "hot" and learning is "hotter". Gone is the teacher lecturer reciting from tried and true classroom lecture notes, replaced by the teacher mentor and collaborator/publisher. The New Teacher is not the fountain of all knowledge but a guide to lifelong learning. Gone is passive learning —rote memorization, repetition, drill— and learning through unconnected and unreal work problems, replaced by learning by doing, by trial and error, by experimentation, and learning in a real world context.

The New "learning" classrooms buzz with an electrical energy, not just the hum of machines but also the noise of excited and engaged voices. Instead of the squeak of chalk against a chalkboard, one can hear the rapid pounding of keyboards, the clicking of mouses, and the

*(Continued on page 3)*

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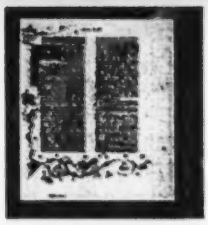

The Gutenberg Bible

Source:http://www.gigatech.com/sites1/gutel/gutel.htm

*We have abruptly replaced our time-honored and slow-to-evolve modes of communication and interaction with new modes. We have in significant ways surmounted the constraints imposed by nature in the process altering our relation to time, space, and to each other. We have scarcely begun to assess the impact of these transformations—that will be the work of generations.*

DIGITAL BOOKS

Source:http://www.yale.edu/

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# The Fate of Wisdom in an Electronic Age

*In The Gutenberg Elegies: The Fate of Reading in an Electronic Age,* (Fawcett Columbine, 1994) the author Sven Birkerts voices the concerns of many raised in the pre-Digital Age. In observing students in his college literature course taught during the fall of 1992, he noted:

> *that they were not, with few exceptions, readers—never had been; that they had always occupied themselves with music, TV, and videos; that they had difficulty slowing down enough to concentrate on prose of any density; that they had problems with what they thought of as archaic diction, with allusions, with vocabulary that seemed 'pretentious'; that they were especially uncomfortable with indirect or interior passages, indeed with any deviations from straight plot; and that they were put off by ironic tone because it flaunted superiority and made them feel that they were missing something.*

Birkerts considers this period a watershed wherein "one way of processing information is yielding to another" and where "vertical consciousness" or wisdom is yielding to "managing information". His major concern is that by losing the ability to "read" with depth , we are losing our ability to connect with previous generations and transmit cultural values and experiences.

Birkerts' observations and fears are significant and worthy of the attention of anyone interested in teaching, learning, and transmitting culture. It is widely observed that students raised in the electronic world are less inclined to read long and ponderous text, their attention spans appear slighter than previous generations, and they seem to be more oriented to the visual and auditory. Many are worried that books, newspapers, magazines, and even traditional penmanship will disappear, replaced by electronic books, zines and signatures.

It is premature, however, to declare this the Age of Unwisdom and the period when books disappeared. It is clear that electronic medium are impacting on the way humans process information but in many ways the electronic medium is restoring ancient traditions of story-telling, reviving ancient languages such as the Celtic language, and bringing generations closer together rather than further apart. Many families are now scanning in old photographs of deceased relatives and using computer networks to chronicle and write down family histories. Many children are using computer networks to ask senior citizens questions about what life was like when they were young. Many college students and their parents are using computer networks to maintain a daily communication when separated by physical distance.

We need to recognize and research the physiological and psychological changes that constant exposure to electronic medium may bring about, particularly in young learners. It is important to provide young learners with opportunities to read with depth, use paints and chalk, skip rope, sing songs, and to socialize and learn in conventional ways but it is equally important to learn how to use new technology innovatively not just to supplement old ways of learning and interacting but also to create new ways of learning and interacting.

Wisdom is not solely a by-product of reading. Surely before Gutenberg, people were wise. Wisdom is, however, the desire to find truth, and that search must bridge generations and historical periods. It is important that as we embark upon this new technological age we continue to keep alive the aspirations, thoughts, and even the frustrations of those who came before us. Through communication, cooperation, and collaboration, we can gain wisdom and continue to promote our common heritage and our humanity.

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# The Interactive School

*(Continued from page 1)*
electronic voices of the computer narrators. Where once students sat at their desks in orderly rows listening to, and watching their teacher in the front of the classroom, now groups of students and teachers huddle together around computer workstations, smiling into cameras mounted on their computer monitors, asking questions of Nobel Prize winning scientists and other experts from all disciplines, and sharing their original ideas and work with the world.

## *Schools for the Interactive Age:*
## *Co-NECT Schools*

**The Connect Exchange**
**Source: http://co-nect.bbn.com/**

*The time has come to create a new generation of American schools. We need schools that are safe, challenging, and intellectually stimulating for all children. We need schools that give every student a chance to learn to read and write, get comfortable with technology, make connections between academic knowledge and real-life problems, and learn to work responsibly and productively with people who are different in respect to age, gender, race, and ethnicity.* ❷

In 1992, The Accelerated Learning Laboratory (A.L.L.) in Worcester, Massachusetts was designated the first Co-NECT School in the nation. There are currently eighteen Co-NECT schools from eight districts. These schools are pioneering new designs and ways of teaching , learning., and managing education.

The Co-NECT school design was developed at Bolt Beranek and Newman, Inc. (BBN) with funding from the New American Schools Development Corporation. The Co-NECT model integrates five key concepts:

- school-based design
- performance assessment
- project-based learning
- a strong professional community
- use of the best available technology❸

The Co-NECT school design is a comprehensive framework for whole school restructuring. Central to the design is developing an environment that empowers all members of the school community (students, teachers, administrators, parents, and business and other community leaders) in a way that ensures academic success and excellence for all children.

Other schools and school districts around the country are also evolving themselves into new places of learning and teaching. The common elements are:

- *strong community involvement* that involve new partnerships between teachers, parents, students, administrators, and corporate and community leaders;
- *clear and defined purposes for technology* in instruction, learning, management, and community communications;
- greater stress on *performance-based assessments*
- *innovative classroom designs* such as multi-age, multigrade learning teams and projects, flex scheduling;
- *interdisciplinary, hands-on, project-based learning* experiences;
- strong support for teacher training and *professional development*

## *New Classrooms*

Larry Mitchell is a teacher in America's "Last Frontier", Alaska. He is also an educational pioneer teaching a multi-age K-3 classroom at the Anderson Elementary School, located on Eielson Air Force Base, Alaska. Larry's students are heterogeneously mixed with some consideration to balance classrooms academically and based on gender.❹

*(Continued on page 6)*

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# The Resources for Science Education Program

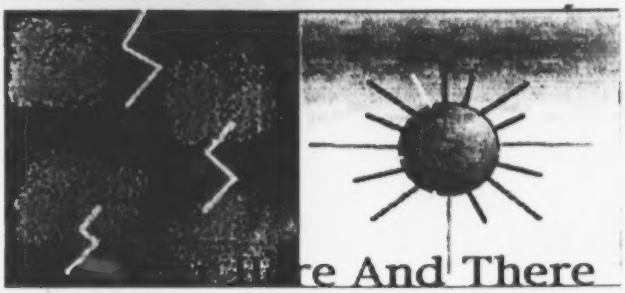
The Resource for Science Education (RSE) Program brings visiting educators to the National Center for Supercomputing Applications (NCSA) to interact with staff and scientists. This Program, which is funded by the National Science Foundation under the Directorate of Education and Human Resources, is pioneering how the Internet can be used to promote engaged and interactive learning and empowered teaching.

The main objectives of the program are to:

- build collaborations between researchers and classroom learners and teachers,
- empower teachers by supporting their innovative uses of new information technologies in the classroom

Classroom teachers from elementary, middle and high schools are working with NCSA staff and scientists to create new online curriculum designed for K-12 learners and their teachers. The projects encourage hands-on, interactive learning by providing a technology-based multidisciplinary study of a variety of subjects including The Arthurian Legends, Mathematical Pi, Weather, and Dynamic Modeling.

These projects provide an excellent starting point for K-12 educators interested in learning how to build unique web-based teaching and learning environments.




*Weather Here and There* is an integrated weather unit which incorporates interaction with the Internet and hands-on collaborative, problem solving activities for students in grades four through six. The unit is divided into six lessons. The lessons provide a multidisciplinary approach to the study of weather. Students learn to observe weather phenomena, plot weather, forecast weather, and broadcast the weather.

This unit was created by Brenda L. Foster, a teacher at Dr. Howard Elementary School, Evelyn Walton, a teacher at Wiley Elementary School, and Deborah S.H. Foertsch, a teacher at the Carrie Busey Elementary School.

**Source:http://www.ncsa.uiuc.edu:80/edu/RSE/RSEred/WeatherHome.html**

## Designing Resource-based Projects that Use the Internet

One of the most interesting projects for all teachers interested in utilizing networking resources is *Designing Resource-Based Projects that Use the Internet*. This project was created by media specialist, Theresa H. Michelson of Urbana High School. It provides a framework for teachers of students in grades six through twelve to work with library media specialists to design for students resource-based projects that use the Internet.

**Source:http://www.ncsa.uiuc.edu/edu/RSE/RSEviolet/RSEviolet.html**

The Pi Mathematics is a multidisciplinary project which focuses on the concept of pi. It was designed by educators Georgette Moore, Yankee Ridge Elementary School and Betty A. Ganas, St. Pius X School for students in grades five through eight. Through various interactive exercises students explore the concept of pi and learn how to use measurement, report data, apply formulas, and problem solve.

**Source:http://www.ncsa.uiuc.edu:80/edu/RSE/RSEorange.html**

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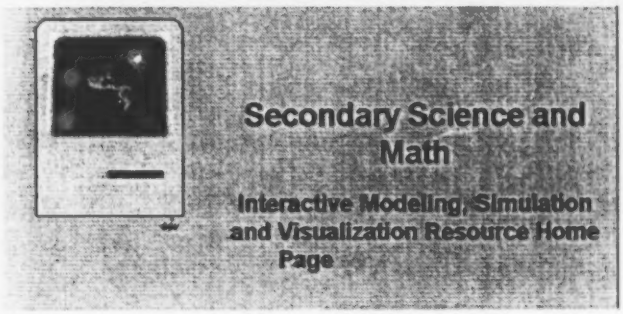
# Promoting Interactive Learning and Empowered Teaching




High School Teachers Elaine L. Wetbrook, Carol A. Engelmann, and David M. Stone have put together a web site designed for secondary science and math educators interested in integrating Web-based resources into their curriculum. Web resources dealing with biology, chemistry, computer science, earth science, physics and mathematics are listed and evaluated based on cost, student engagement, and National Standards.

Some of the resources evaluated include:

*The DMS Model* allows manipulation of eight factors regulating oceanic food web.

*The Heart Preview Gallery* allows the user to take a standard heart/circulatory system tour. This resource serves as an excellent foundation for middle school and Introductory Biology students.

*Stella II (Systems Thinking in an Experimental Learning Lab with Animation)* is a powerful and flexible program for building models of dynamic systems and processes.

NESP Wireman (National Education Supercomputing Program) provides a unique resource for teachers and students in elementary, junior high, high school, and community college.

**Source: http://www.ncsa.uiuc.edu:80/edu/RSE/RSEindigo/modelhomepage.html**

The *Good News Bears Stock Market Project* is an interdisciplinary project specifically designed for middle school students and teachers.

The project provides students with the opportunity to track and manage their own portfolio of stocks. Teachers are provided with lessons and warm-up discussion topics designed to help students understand the stock market and its relevance.

**Source: http://www.ncsa.uiuc.edu:80/edu/RSE/RSEyellow/gnb.html**

The *Arthurian Legends* project was designed to provide secondary students with Web-based resources for the multidisciplinary study of Arthurian legends.

Student Resource Pages (SRPs) are designed to allow students to share their and expand their existing knowledge of Arthurian legend and Medieval Times and to provide students with the opportunity to practice using web resources.

The site was conceptualized and developed by Katherine Eisenhower, a teacher at the Hylton High School in Woodridge, VA.

**Source: http://www.ncsa.uiuc.edu:80/edu/RSE/RSEblue/arthur/artidu.html**

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# TEACHING AND LEARNING

*(Continued from page 3)*

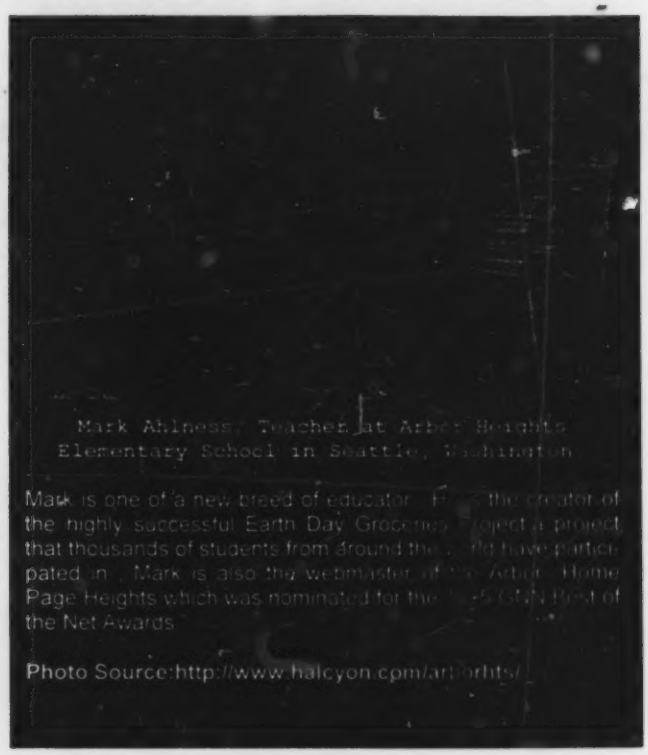
Third, Fourth and Fifth graders at the Barnett Shoals School in southeastern Georgia spend 45 minutes a day 4 days a week working jobs in the Micro Society. Students run a Post Office, a newspaper and a Bargain Barn, and get paid between $90 and $100 a week. Their money is saved in bank accounts and they are asked to pay taxes and tuition.❺ At the Chico Junior High School in Chico, California, students work in an $8000 tv broadcast studio.The class of twenty-four students is divided into two teams of 12 members each. Students come into the studio at 7:15 on their team's broadcast day and tape a broadcast that is transmitted to the whole school via closed circuit tv. During that day they spend their class period putting together the program for their next broadcast. Students work cameras, sound equipment, edit tapes, mix videos and write the scripts.❻

The characteristics of a classroom are changing. The traditional classroom with rows of desks and students grouped based on age and ability is evolving into a classroom that sometimes looks more like a scientific laboratory, broadcast studio, or think tank. Students of varying ages, abilities, grades, interests and even from diverse geographic locations and cultures are collaboratively working together on an amazing range of interdisciplinary projects. Students are using technology to collaborate and communicate across vast distances and are also using technology to create their unique knowledge products. However, students are also exploring their world through role-playing, field trips and field research activities, and through school-wide and community-wide activities that promote an active student involvement in decisionmaking, management, and communications.

Project-based learning requires more flexible scheduling than permitted in the traditional classroom. Block or modular scheduling affords the opportunity to allocate more time for activities that require longer and concentrated periods of research, exploration, or production. Project-based learning is often optimized through heterogeneous groupings, with teams of students and teachers with varying interests and abilities working together on a given project.

In general, interactive classrooms are:

- more heterogeneous in composition,
- based on flex scheduling;
- interdisciplinary and project-based;
- collaboratory in nature, involving new collaborations between students, between students and teachers, and between students and between students and researchers and experts from universities, government agencies, corporations, and non-profit organizations such as museums and research foundations.



Mark Ahlness, Teacher at Arbor Heights Elementary School in Seattle, Washington

Mark is one of a new breed of educator. He is the creator of the highly successful Earth Day Groceries Project a project that thousands of students from around the world have participated in. Mark is also the webmaster of the Arbor Heights Home Page Heights which was nominated for the Best of the Net Awards

Photo Source:http://www.halcyon.com/arborhts/

## *The Role of Teacher*

In an interactive classroom, the role of a teacher changed from the traditional "giver of knowledge" to that of a guide, co-learner and learning architect. The demands are greater on a teacher in a new interactive school and classroom as they are on the students, but generally the teachers in these environments receive more school and community recognition for their efforts and achieve a higher degree of job satisfaction.

The Learning Through Collaborative Visualization (CoVIS) project, is pioneering how to improve science education for middle and high school-age learners, employing a broad range of communication and collaboration technologies. There are a number of key guiding principles recommended to CoVIS educators including:

- Learn science by doing science;
- Invite and nurture open-ended questions

*(Continued on page 7)*

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# IN THE INTERACTIVE CLASSROOM

- Foster refinement of questions in reflective discussions;
- secure respect and value for the diversity of learner's questions;
- provide multiple representations as diverse and flexible means for asking and answering questions;
- teach inquiry by modeling inquiry;
- support progress in learning by seeding it with the use of powerful ideas;
- reflect these principles in the assessment of student activities.❼

These guiding principles, with some modification, can apply to other disciplines as well, and underscore a new pedagogy that clearly involves a greater level of engagement by the teacher as well as the students.

Teachers that are directing students in the use of new technologies are anything but passive teachers. The best projects are those that are carefully crafted by students, teachers, and other adult mentors. Teachers can model good uses of technology as well as design projects that integrate well with core curriculum and scale upon the prior knowledge of their students.
This kind of pedagogy requires more time for planning, assessment and mentoring on a one-to-one, or team basis as well as requires more opportunities for professional development and collaboration. This kind of teaching is highly demanding and is optimized by reasonable class sizes, less rigid classroom schedules, and more "free" or "non-classroom" time that can be devoted to professional development, mentoring and research and development of project designs.

Students At The Doshisha International School in Kyoto, Japan, .

Source:http://www.doshisha-mtnl.tanabe.kyoto.jp/students'_section.html

## *Learning Interactively*

*Each child is unique, the child learns through interacting with his environment; each child should and can become an independent, resourceful and creative thinker; a love of learning is basic to continuous learning; and true education is a process, not a product.* (Baker Demonstration School, Evanston, Illinois, Philosophy,http://nlu.nl.edu/bthu/nlu/baker.html)❺

Interactive learning is personalized, generative, collaboratory, multi-dimensional and multi-disciplinary, dynamic, empowering, and compelling. The interactive learner communicates and collaborates with people from around the world, explores the real and virtual worlds, and computer programs to explore and investigate new information and knowledge sets, scale upon prior knowledge, create new knowledge and produce unique and original creative works. The learner is primarily self-motivated and capable of some degree of self-evaluation and assessment.

Interactive learning is optimized by collaboration with teachers, parents, other adults, and other learners. Collaboration is facilitated via e-mail, real-time video conferencing, collaboratory notebooks, shared computer screens, project webs, chats, discussion groups, and muds and moos. Learners work together to research subjects of mutual interest and to compile and present the results of their research to one another and others with an interest in the subject of inquiry.

The key to successful interactive learning is empowerment. If a learner feels a sense of ownership over the learning design and process, the learner will generally be more self-motivated and driven. The empowered learner is more willing to expand their knowledge base and work with teachers and other adult mentors in order to accomplish a task or complete a project, and indeed often feels compelled to reach to new self-standards of excellence.

References:

❶For information on Java see: http://java.sun.com/
❷Co-NECT Home Page, http://co-nect.bbn.com/WWW/co-nect.html
❸Co-NECT School Design, http://co-nect.bbn.com/WWW/whatis/about_co-nect.html#s_design
❹ Multage Classrooms, http://www2.northstar.k12.ak.us/schools/and/pro/mage/multiage.html
❺Micro Society, http://bob.coe.uga.edu/~bbiddle/bshoals/micro.html
❻ Chico Jr. High, Broadcast Studio, http://www.chicojr.chico.k12.ca.us/tech/bs.html
❼CoVIS Guiding Principles, http://www.covis.nwu.edu/Geosciences/philosophy/principles.html
❽Baker Philosophy, http://nlu.nl.edu/bthu/nlu/bakerphil.html

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# CU-SEE ME IN Cyberspace And...

In 1992, scientists at Cornell University released the first version of CU-SEEME, a real-time videoconferencing program for desktop computers. This program allows multiple users in remote sites to conduct audio and video conferences over TCP/IP networks. Users must have some kind of video camera and a microphone to use Cu-SeeMe and also must have full internet access.

Student Ambassadors from the Global Schoolhouse Project participate in a live CU-SeeMe Session To Celebrate the UK-LA '94 Festival, November 3, 1994

Source: http://sunsite.unc.edu/cisco/photo-arch.html

The earlier versions of CU-SeeMe were written for the Macintosh platform and did not include audio. Current versions are available for MacIntosh and Windows platforms and also support audio as well as allow the exchange of text and slides.

## *General Applications of Cu-SeeMe*

This software supports global collaboration and conferencing via the Internet. The applications of desktop videoconferencing are now being tested in the workplace, the school, and the home environments. The benefits are being documented but it is clear that the future is promising for more extensive use of this Internet application in society as Internet access becomes more prevalent.

Desktop videoconferencing is different than videoconferencing in that it allows smaller teams of collaborators to work together on projects. It is less of a mass media tool and more of a tool for customized and personalized uses. It allows "experts" to work with small groups of people and it supports more frequent and regular collaboration than is possible using tv broadcast.

It is in the area of learning that CU-SEEME is rapidly proving its value and benefit to all ages of learners and their teachers. Synchronous communications and collaboration is a powerful learning tool that excites learners and supports more spontaneous learning and interaction.

## *The Global Schoolhouse Project*

The Global Schoolhouse Project was launched in 1992 with funding from the National Science Foundation. The hallmark of the project was its pioneering use of CU-SEEME technology with young learners.

In the original project, four schools located in London, England, Virginia, California and Tennessee undertook collaborative research on environmental issues using videoconferencing technology. From September 1993 through December 1994, the students from the Long Branch Elementary School in Arlington, VA, the Cedar Bluff Middle School in Knoxville, Tennessee, the Jefferson Junior High in Oceanside, CA and schoolchildren in London, England communicated with each other and with national and international leaders such as US. Senator Diane Feinstein, anthropologist, Dr. Jane Goodall, and the US Ambassador and former Vice President, Walter Mondale. Students discussed their research into environmental issues and their study of Vice President Gore's book, *Earth in the Balance: Ecology and the Human Spirit.*

The NSF-funded Global Schoolhouse Project officially ended on December 29, 1994 but its pioneering work using the CU-SEEME video-conferncing technology continues with the Global SchoolNet Foundation (GSN) and with other schools around the world. In 1995, the Global SchoolNet Foundation created a CU SEEME school directory. This directory can be accessed on the world wide web at: http://www.gsn.org/gsn/cuseeme.k12list.html. In addition, GSN is hosting the cu-seeme-schools@gsn.org listserv that allows schools using this technology to announce upcoming events and collaborate together. To subscribe to the listserv, send a message to:

lists@gsn.org

In the main body of the message, write:

subscribe cu-seeme-schools

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# Video Conferencing for K12 Learners

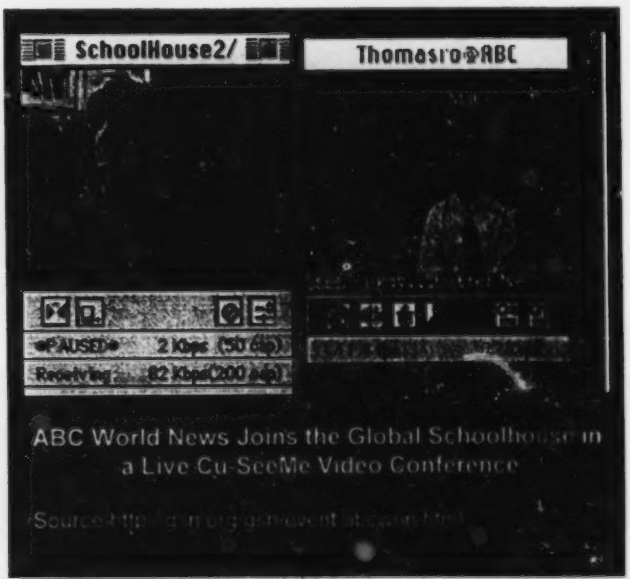
*(Continued from page 8)*

## *Applications of Cu-SeeMe Technology in Classrooms*

The Global Schoolhouse classrooms demonstrated that Cu-SeeMe technology could be used to nurture and support *collaborations* between students, between students and experts, and between teachers and experts. Real-time videoconferencing provides learners with the opportunity to meet and interact with people around the globe in an exciting and dyanmic manner.

The Learning Through Collaborative Visualization (CoVIS) Project Classrooms are also exploring new ways to use Cu-SeeMe. On a weekly basis, CoVIS students are able to participate in *interactive weather briefings* using Cu-SeeMe and/or QuickTime Video Conferencing (QTC), a software that combines a video conferencing capability with the screen-sharing of Timbuktu into a single.software package. Atmospheric scientists from the University of Illinois conduct these weather briefings, :conveying to students critical information and discussing these concepts with the students.

CoVIS students are also able to go on *virtual field trips* to the Exploratorium in San Francisco via CU-SeeMe technology. The students are able to interact in real time with scientists at the Exploratorium who demonstrate and discuss an assortment of topics.




ABC World News Joins the Global Schoolhouse in a Live Cu-SeeMe Video Conference

Montage of Cu-SeeMe Sessions

Source: http://www.hiof.no/ludvigsen/webdoc/video.html

Other schools are finding their own unique ways to use this resource: to conduct online research, online interviews, share and present data, research, and creative works such as joint musical compositions and art exhibitions, explore remote places and meet telementors and new collaborators.

## *Future of Video Conferencing For K12 Learners*

The technology is evolving and growing both more reliable and more powerful. This software development is coinciding with the general evolution and democratisation of the Internet which augurs well for a more extensive use of the capability by K-12 schools and learners. Video conferencing is just one more powerful tool that teachers and learners can use to enhance the learning experience and achieve a new global reach.

## *Additional Information on Cu-SeeMe*

Welcome to Cu-SeeMe Schools Page at:http://www.gsn.org/gsn/cuseeme.schools.info.html

Cu See-Me Cornell Home Page at: http://cu-seeme.cornell.edu/

Michael Sattler's Cu See-Me Page at:http://www.indstate.edu/msattler/sci-tech/comp/CU-SeeMe/index.html

White Pine Home Page at:http://www.wpine.com/cu-seeme.html

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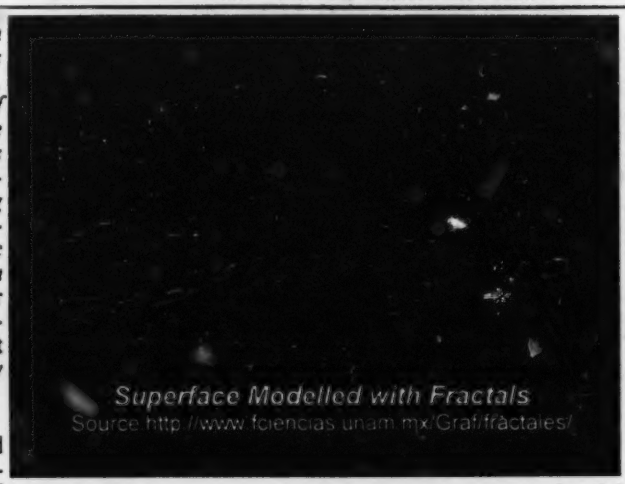
# The *New* New Math

*Mathematics is essentially a process of thinking that involves building and applying abstract, logically-connected networks of ideas. These ideas often arise from the need to solve problems in science, technology, and everyday life—problems ranging from how to model certain aspects of a complex scientific problem to how to balance a checkbook.* (Benchmarks for Science Literacy, American Association for the Advancement of Science, Oxford University Press, 1993, p. 209)




Mathematics has always played an integral role in human civilization. Mathematics applied created the pyramids in Egypt, the Gutenberg press, the electric generator, the artificial lung, Beethoven's Ninth Symphony and the choreography in Leonard Bernstein's West Side Story.

Every day each and every one of us applies mathematical principles to some degree whether we are musicians, poets, gamblers, accountants or mathematicians. Our world is a world of numbers, patterns, relationships, and complex and chaotic systems dynamically interacting and evolving in a time continuum.

## *Mathematics Instruction*

Few adults recognize that mathematics is truly an aesthetic art because often their first encounter with mathematics was through repetitious drills, totally abstract problem-solving with no connection to real world problems, and long and difficult tests, demanding recall of esoteric equations and terms.

The teaching of mathematics is changing, and today young learners in elementary school work with manipulatives, quilts, and twenty-four game challenges to acquire mathematical understanding in an exciting and engaging manner. The National Council of Teachers of Mathematics (NCTM) has played a critical role in the reform of mathematics education in the United States and worldwide. The Curriculum and Evaluation Standards for School Mathematics or NCTM standards have become the guiding principles for a new approach to mathematical learning that promotes both knowledge and practice. (See World Wide Web: http://enc.org/online/NCTM/280dtoc1.html)

## *Technology and Mathematics Education*

Technology has played an increasingly important role in the study and evolution of mathematics. The technology of measurement and the technology of computation, and now the technology of visualization and modelling are pushing the frontiers of mathematical inquiry.

Today, students of mathematics can embark on mathematic adventures that were beyond the wildest dreams of most mathematicians just a generation ago. A new generation of scientific visualization tools is now supporting student inquiry into significant mathematical and scientific problems. Even elementary age students are able to use complex data sets to analyze weather, climate, the movement of the planets, and geologic activity on the earth and on distant planets in our solar system. They are learning to apply mathematics in real world contexts such as scientific research and analysis, engineering, design, economic and stock market analysis, and other social science research and analysis involving complex and dynamic data sets.

Other technologies such as collaboratory notebooks and web pages are supporting mathematical study by opening up new kinds of collaboration, communication, and curriculum.. Students are able to participate in global mathematics competitions, and are involved in the creation of web pages that pose significant mathematics challenges to other learners around the globe.

## *The New Interactive Math*

The study of mathematics has become highly interactive. Learners are using e-mail, listservs, web pages, visualization and simulation technologies to explore simple and profound mathematic principles in engaging and exciting ways. What follows is a sample of some of the places and software available via the Internet for the study of mathematics.

## *MathMagic*

MathMagic is a K-12 telecommunications project developed by educator Alan Hodson of El Paso, Texas. Challenges are posted in four categories (K-3, 4-6, 7-9 and 10-12). Each registered team of students works with a Net Team Partner which can be either local, state, national or international. The teams discuss solutions and ultimately offer one solution that is posted.

The Internet is used to post the challenges, carry on the team discussions, and post the answers.

The MathMagic home page is located at:

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# Online, Interactive and Engaging

http://forum.swarthmore.edu/mathmagic/

### *Ask Dr. Math*

Elementary, middle and high school students can submit mathematic questions to Dr. Math. Swarthmore College math students are responsible for personally answering these queries.

The questions and the answers are archives at the Dr. Math Web site, see http://forum.swarthmore.edu/dr.math/dr-math.html

### *The Geometry Forum*

The Geometry Forum, an NSF-funded project housed at Swarthmore College, is experimenting with the use of the World Wide Web for mathematics instruction. Some examples of web-based projects are:

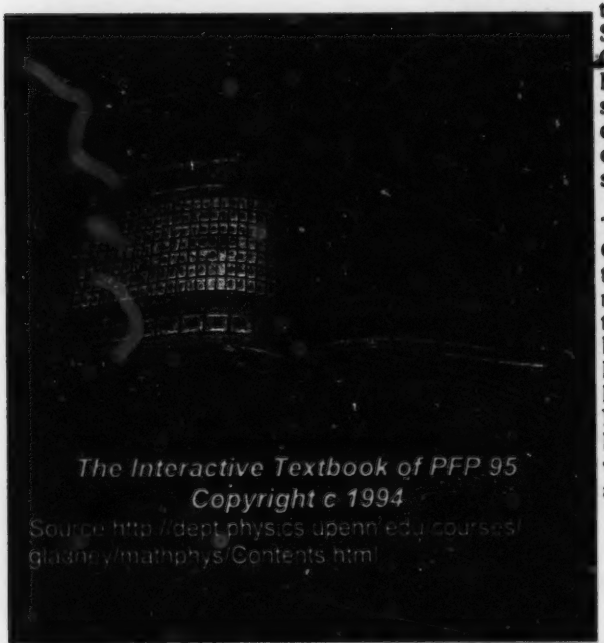
- Algebra and Calculus via Sketchpad;
- Building Models of Surfaces;
- Geometry Through Art;
- Hypercard, Hyperstudio, and Tesselations;
- Introduction to Vectors

- Skydome: A Newspaper Review Unit

These and other projects can be found at: http://forum.swarthmore.edu/web.units.html

### *The Geometry Center*

The Center for the Computation and Visualization of Geometric Structure is a National Science Foundation Science and Technology Center at the University of Minnesota. The Center supports K-16 math education , and has create an online web nexus for the study of geometry.




The Gallery of Interactive Geometry allows students to study complex mathematical problems using interesting and engaging online projects such as Build a Rainbow, Orbifold Pinball, and Techmuller Navigator. The Center is located at:http://www.geom.umn.edu/apps/

### *The Fractal Microscope*

The Fractal Microscope is an interactive tool designed by the Education Group at the National Center for Supercomputing Applications (NCSA) for exploring the Mandelbrot set and fractal patterns. Students and teachers at all grade levels can use this tool to explore the art of mathematics. Students can visually model natural phenomenon and effortlessly explore elementary mathematic principles while enjoying the Mandelbrot set. The Fractal Microscope can be found at:http://www.ncsa.uiuc.edu/Edu/Fractal/Fractal_Home.html

### *Non-Euclidean Geometry*

NonEuclid is an interactive simulation of the Poincare Model of Hyperbolic Geometry designed for high school and undergraduate education. The software tool was developed at the Center for research on Parallel Computation (CRPC) of Rice University. NonEuclid creates an interactive environment for learning and exploring non-Euclidean geometry. The software runs on Macintosh computers and is available without fee for education purposes. It can be obtained at:http://rice-info.rice.edu/projects/NonEuclid/NonEuclid.html

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# Woos, Moos, Muds, Mushes and Muses ....

*The question is, shall we inhabit a world shaped (as we have longed believed) by lifeless mechanically interacting fragments driven by mechanical laws and awaiting our reassembly and control? Or shall we inhabit a world—the one suggested by fractals and chaos—that is alive, creative, and diversified because its parts are unified, inseparable, and born of an unpredictability ultimately beyond our control?* (*Fractals, The Patterns of Chaos* by John Briggs, A Touchstone Book, 1992, p. 180)

For most people over the age of thirty, the world of woos, moos, muds, mushes and muses is a foreign land, inhabited by strange people, speaking in strange dialogues. It is a world of the imagination brought to life through text, dialogue, role-playing, and computer programming.

These network-based virtual worlds are places where the younger generations from around the globe are creating a new form of literature—*the chaotic genre*. Groups of people together visit these synthetic or fantasy worlds with names like: The Realm, HoloMud, Miami Moo, OceanaMuse, BayMoo, 1848 Moo, The Sprawl, LambdaMoo, EnigMoo, and Pueblo, and they socially interact, create new worlds, create new situations, and develop a community story. Indeed this new form of interaction called MUDding is very much a product of a new aestheticism that is based on the order of uncertainty.

This MUD world of game-playing and fantasy is like a play in progress. The play is read and written by those who choose to enter this virtual world. The actors serve as playwright and director and audience. It is the theater of chaos that can only be appreciated if one rolls up their sleeves and joins in its creation.

## *A Brief History of Muds*

A MUD (Multiple User Dimension, Multiple User Dungeon, or Multiple User Dialogue) is a network-based computer program that allows multiple users to communicate synchronously, explore, multiple rooms, and build new capacity.

The original *MUD* (Multi-User Dungeon) was written in 1979 by Roy Trubshaw and Richard Bartle at Essex University in Britain. This was a text-based fantasy role-playing game that allowed multiple users to play together simultaneously. This game environment was like the popular board game of the 1970s, *Dungeons and Dragons*, and people went off on quests, facing dangers at every turn.

In 1989, James Aspnes, a graduate student at Carnegie Mellon University, removed the "Dungeons and Dragons", and created a world of exploration called "TinyMud". TinyMud did away with verbs such as "to kill" and emphasized cooperation, communication, and the creation of new worlds.

Muds based on client/server technology continued to evolve, attracting more and more users, creating new environments and supporting new building capacity.

In the winter of 1990, Stephen White wrote TinyMUCK. In TinyMUCK the @teleport command was introduced..This command made it easier for people to move around the virtual world and spend more time interacting with other people.. MUCKS became social MUDS where participants can visit multiple rooms and interact with other participants using a networked chat program.

In 1990, Larry Foard wrote the code for TinyMUSH. This MUSH (Multi-User Shared Hallucination) program introduced PUPPETS, or robot-like objects. MUSHes emphasized social interactions and community building.

In October 1990, Pavel Curtis at Xerox's Palo Alto Research Center, released LambdaMOO, the first MOO (MUD, Object-Oriented or Multiuser Object Oriented System). LambdaMOO introduced object-oriented programming, a more friendly user language. that allows multiple users to manipulate the environment in infinite ways. Using this language, virtually any player could create objects and use objects to build new virtual places.

Also in the fall of 1990, Stan Lim and Barry Kort introduce MicroMUSH., a virtual world that features a place called Cyberion City. In the summer of 1991, MicroMUSH's name is changed to Mi-

*(Continued on page 13)*

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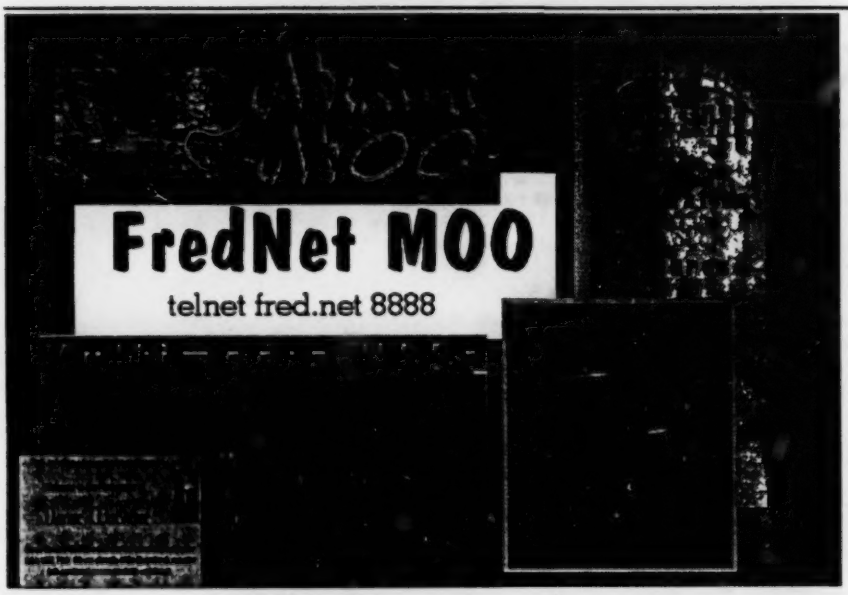
# Virtual Reality and New Age Literature




croMUSE, and it becomes the first MUD designed for K12 learners.MUSEs or Multi-User Simulation Environments.

The MUDS continue to evolve. The introduction of the world wide web has introduced new capabilities. In June 1994, SenseMedia Netcasting opened "the Sprawl", the first public web server and multimedia MOO. The Sprawlftp://ftp.musenet.org/chezmoto/muse/info/ supports the WOO protocol ( an internet communications protocol designed to integrate the world wide web and MOO environments (WEB +MOO = WOO). One can browse The Sprawl by clicking on the objects one wants to see. WOO objects may contain inland images and audio.

## *MUDS In Education*

Educators are building MUSES, MUDS and MOOs that are specifically-designed for K-12 learners. These environments are based on the constructionist model of learning and encourage students to collaborate together to build their own worlds, and explore historical and virtual worlds. Students are able to embark on adventures that allow them to discover knowledge in an exciting and interactive manner.

In these virtual worlds, students can study history, science, mathematics, in a game-playing and/or communications environment. They can acquire problem-solving skills as well as develop writing and communication skills.

## *Some Educational MUDS*

***FredNet MOO** started in January 1995.* In FredNet MOO students can visit the biochemical lab and therein study the chemical processes in the human body. They can also travel to Shanghai, China, the Iceman Museum, Ancient Rome, Ford's Theatre, or a South Philly Pizza Parlor.

FredNet MOO is found at: http://www.fred.net/cindy/frednet.html, or telnet to fred.net 8888.

**The MiamiMOO Project.** Students at the Miami University in Oxford, Ohio are building virtual models of important historical and religious buildings and regions. The project is sponsored by the University's Classics and Religion Department. Information on this MOO is found at: http://Miami-MOO.MCS.MUOhio.Edu/#2

**OceanaMUSE** is a world of islands on an ocean. The MUSE allows participants to explore environmental issues, political power, and intercultural communication. OceanaMUSE is found at web site: http://www.nlanr.net/COLL/Oceana/oceana.html, or Telnet to oceana.sdsc.edu 4201

**Pueblo Learning Collaboratory.** Students at Longview Elementary School Phoenix, Arizona and researchers at Phoenix College are pioneering the use of MUDS with K-12 students, particularly at-risk students. MariMUSE , the forerunner of Pueblo, was introduced in the spring of 1993. In Pueblo, students can build all sorts of objects including homes and swimming pools. The project web site is located at:http://pc2.pc.maricopa.edu/

**MicroMUSE** was the first MUD designed exclusively for K-12 users. MicroMUSE is based at MIT's Artificial Intelligence Lab. MicroMUSE is located in Cyberion City II. In this city one can explore such places as the Cyberion Community Center, Space Port, Cyberion City University, the Science Center, the Air and Space Museum, the Curio Shop, The Phone Company, MicroBoardwalk, and many other interesting and engaging places. For more information about MicroMUSE go to:ftp://ftp.musenet.org/chezmoto/muse/info/, http://www.musenet.org/microdocs.html

## *Good Starting Points:*

*Information on Muses and MuseNet:* http://www.musenet.org/

*Yahoo Index to MUDS, MOOS, MUSES:*http://www.yahoo.com/Recreation/Games/Internet_Games/MUDs__MUSHes__MOOs__etc_/MOOs/

*Educational Technology:* http://tecfa.unige.ch/edu-comp/WWW-VL/eduVR-page.html

*The Mud Archive* http://www.ccs.neu.edu/home/lpb/muddex.html

*The Mud TimeLine.* http://www.ccs.neu.edu/home/lpb/mudline.html

*Internet Virtual Worlds, Quick Tour,* by Sean Carlton (Ventana Press, Chapel Hill, NC, 1995)

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# INFOBYTES

## What On Earth— A Multimedia News Journal for Kids

***What on Earth*** is a multimedia news journal for kids ages 6-18. It includes six daily news stories and accompanying activities, created by a team of multimedia authors, education specialists and journalist. The program uses Reuters text wire services and photo archives. The news stories are presented in a mulitmedia format that incorporates video, sound, graphics, photosand interactive learning challenges. Each day, the program is delivered over cable to schools and home computers.

In addition to the regular *What On Earth* Staff there are three youth reporters who write regularly-scheduled current events columns. Amanda Brodjeski (age 14) writes "EcoBeat" a column focusing on environmental issues. Tomicah Tillemann-Dick (age 16) writes "Artwise", a column which contains weekly entertainment reviews. Yasmeen Watson (age 13) writes "StyleCouncil," a column which focuses on fashion and fads.

Check Out the Ingenius Online. Point your web browsers to:

**http://www.ingenius.com/**

Ingenius Online Hot Spots include: Fred Fiscal, Shockwave, and Art Zine.

For more information about *What On Earth* or Ingenius:contact:

**1 800 7PC NEWS**
**E-mail: info@ingenius.com**
**WWW: http://www.ingenius.com**

## Get Ready, Get Set, Go On-Line

*Get Ready, Get Set, Go On-Line!* is a new video commissioned by the Research Program on Communications Policy at MIT. This is a two-part, 72 minute video that features three Minnesota schools and their unique Internetworking plans. The video includes information on how to mobilize resources, get funding, develop effective technology plans, train teachers, and how to effectively use the Internet for teaching and learning.

For more information send an e-mail note to info@mastcom.com or contact:

**Fritzie Borgwardt**
**Master Communications Group, Inc.**
**7322 Ohms Lane**
**Minneapolis, MN 55439**
**Telephone: +1 612-835-6164**

## Two New "Math Talk" Programs from the Children's Television Workshop

The Children's Television Workshop released two new "Math Talk" Programs, Math Talk for Teachers: An Introduction, and Math Talk for Families: Measuring and Geometry. Both video programs are accompanied by activity booklets. Math Talk for teachers is designed to help classroom teachers for grades 4-6 incorporate cooperative learning techniques in math instruction..Math Talk for Families provide parents with information about changes in mathematics education and ways to help their children with their mathematics homework.

Both programs can be taped off the air for free but most be erased after eight years. For more information call PBS Video at: +1 800-344-3377.

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# FEBRUARY 1996

**15-18 February. Quest for the Best, FETC/FATIC 1996.**

Orange County Convention Center, Orlando, Florida. The Florida Educational Technology Conference (FETC) is one of the largest conferences devoted to educational technology in the US. In 1995, more than 4,000 participants from all over the world attended. In 1996, there will be 220 breakout sessions, 3 general sessions, and 30 workshops. For information contact:

Internet: fetc96@mailfirn.edu
World Wide Web: http://www.firn.edu/fetc/fetc.html
Tel: +1 904-488-0980

# MARCH 1996

**4-6 March. Midwest Education & Technology Conference. 13th Annual**

Cervantes Convention Center at America's Center, St. Louis, Missouri. Guy Kawasaki, Apple Fellow and noted author will deliver a k eynote address. For more information write to:

Conference Coordinator, 1460 Craig Road, St. Louis, MO 63146, or call +1 314-692-1250.

**13-16 March. SITE 96. The 7th International Conference of the Society for Information Technology and Teacher Education.** For more information write to:

SITE [illegible] 2966, Charlot[illegible]02 USA, or call [illegible] or FAX: [illegible] send e-mail to [illegible].edu.

**17-20 March. ICTE'96 Technology and Communications: Catalyst for Educational Change.**

New Orleans, Louisiana. ICTE is an international conference. Delegates from over forty countries, and from many different positions in the world of education and training will attend. More than half of those attending will make some sort of presentation and those presenting papers will be published in the Conference Proceedings. The Conference is divided into eight sub-themese, each examing a particular aspect of developments and progress in technology and communication, including current and future uses of the information infrastructure in education and training for educational institutions and private businesses. For more information:

ICTE NEW ORLEANS' 96
Post Office Box 195349
UTA Station
Arlington, TX 76019-0001 USA Telephone: +1-817-534-1220; Fax:+1-817-534-0096;
E-mail: icte@icte.org;
World Wide Web: http://www.onramp.net/~icte

# MAY 1996

**2-4 May. 1966 10th Annual VSTE Technology Conference**

Hotel Roanoke and Conference Center, Roanoke, Virginia. May 2 will be a full-day of hands-on workshops and May 3rd and 4th will be general sessions geared towards educators who work in the classroom and administrators who work with those educators. For more information contact:

darkin@pen.k12.va.us or call +1 804-320-3424

# JUNE 1996

**11-13 June. NECC'96, Call of the North**

Minneapolis Convention Center, Minneapolis, MN. Hosted by Technology and Information Educational Services (TIES) and Sponsored by National Educational Computing Association in cooperation with University of Minnesota, St. Cloud University, and Twin Cities AECT. For more information write to:

NECC' 96/TIES, 2665 Long Lake Road, Suite 250, Roseville, MN 55113-2535

**25-28 June. INET'96, The Internet: Transforming Our Society. Now., Montreal, Canada**

INET'96, the [illegible] Conference of the Internet Society, bringing on world [illegible] networking with [illegible] 1996 in Montreal, Canada. This conference brings together [illegible] expanding the reach and use [illegible] networks. Participants include those developing and implementing Internet networks, applications, and policies for worldwide infrastructure development.

For further information:
Email: inet96@isoc.org
Tel: +1 703 648 9888
Fax: +1 703 648 9887
Address: INET'96 Internet Society Secretariat,12020 Sunrise Valley Dr., Suite 270, Reston VA 22091USA
URL: http://www.isoc.org/conferences/inet96/

# JULY 1996

**24-27 July. Second International Conference on the Learning Sciences, ICLS 96**

Northwestern University, Evanston, Illinois. Hosted by the Association for the Advacement of Computing in Education. ICLS will bring together professionals from academia and industry to share [illegible] insights on foster[illegible] serve [illegible] cial focus [illegible] ons in both [illegible]. For more [illegible]

http[illegible]/icls96[illegible]/
http[illegible]edu/aace
E-Mail: AACE@virginia.edu
Tel: +1-804-978-7449

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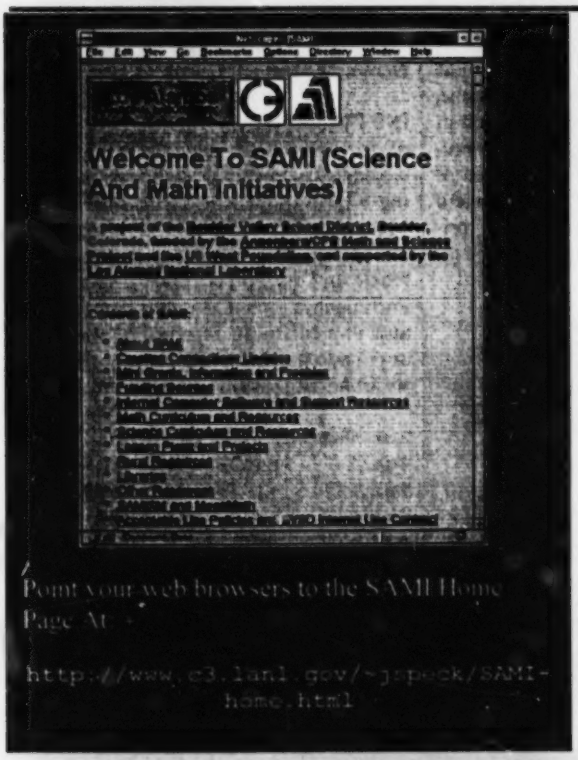
# NEW MATH RESOURCES (CON'T)




Point your web browsers to the SAMI Home Page At:

http://www.c3.lanl.gov/~jspeck/SAMI-home.html

SAMI (Science and Math Initiatives) is part of *Creating Connections*, a rural math and science initiative funded by the Annenberg/CPB Math and Science Project and by the US West Foundation. Creating Connections is training rural math and science teachers to use the Internet, and is building the SAMI database, a clearinghouse of resources, funding and curriculum for science and math.

SAMI is housed at the Los Alamos National Laboratory and can now be found at a new world wide web address:

**http://www.c3.lanl.gov/~jspeck/SAMI-home.html**

Special Note: SAMISM and MegaMath are challenges created for students and teachers at all levels.

***SAMISM*** (Science And Math Initiatives Solve Me) is found at:

**http://www.c3.lanl.gov/~jspeck/SAMISM-home.shtml**

Mathematical challenges are posted and solutions can be sent by e-mail to: betasami@bvsd.k12.co.us. The solutions will be posted.

***MegaMath*** is a fun interactive math learning site designed for elementary age students and their teachers. This product was produced by the Computer Research and Applications Group at Los Alamos. Mike Fellows and Nancy Casey created the MegaMath Workbook which provides additional activities. MegaMath is found at:

**http://www.c3.lanl.gov/mega-math/**

NETTEACH NEWS IS THE CHOSEN NEWSLETTER FOR PIONEER NETWORKING EDUCATORS WORLDWIDE. IT PROVIDES A FORUM FOR THE EXCHANGE OF INFORMATION ABOUT HOW ADVANCED NETWORKING TECHNOLOGIES ARE CHANGING SOCIETY, AND IN PARTICULAR THE WAY WE TEACH, LEARN AND DEAL WITH ONE ANOTHER. IT IS INTENDED AS A PLATFORM FOR MANY VARIED PERSONAL AND COLLECTIVE TRAVELS TO NEW NETWORLDS, FOR CONTACTS AROUND THE GLOBE AND A PATHWAY TO NEW GLOBAL LIVING LEARNING VILLAGES.

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# NETTEACH NEWS

VOLUME 2 NUMBER 6 JANUARY 1996


## THE COMING REVOLUTION IN EDUCATION

*I used to think that technology could help education. ....But I've come to the inevitable conclusion that the problem is not one that technology can hope to solve. What's wrong with education cannot be fixed with technology. No amount of technology can make a dent.*

Steve Job, An Interview In Wired, February 1996, p. 158

Many people are shocked that Steve Jobs, one of the creators of Apple, Inc. publicly threw in the towel in the above-quote and declared that technology cannot solve the problems of public education. The Wired magazine carrying Steve's declaration which came in a rather lengthy interview had barely hit the bookstands when already some local politicians in Fairfax County, Virginia were using this quote as evidence that technology in schools is a waste of money. What Steve has really failed to perceive is that a revolution in education is at hand, and advanced technologies are playing a fundamental role.

### *The Parent Technologist—The Culture of Change*

Steve's disillusion with public education really comes as no surprise to those of us who have focused our energies wholeheartedly on bringing the "new" advanced technologies into the K12 environment.. Steve, in fact, represents a small but growing segment of the school parent community known as the technologists or the Internet-types who are making appearances in PTA meetings and in the halls of schools during school hours for the first time. Unlike the more traditional volunteer parents, these parents are not offering to Xerox, to bake cakes, to

*(Continued on page 2)*

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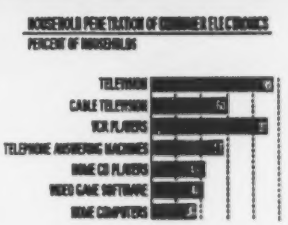


***Household Technology***

Source: Reinventing Schools, URL: http://www.nas.edu/nap/online/techgap/juggernaut.htmlabout.html

***It isn't a matter of intellectual debate as to whether or not we will or will not have technology. We will have technology, and it will change education. One of these days, every students will have access to a large database and a computer, and then we will have to ask the question: What is the education enterprise to do?"***

Alvin Trivelpiece, Oak Ridge National Laboratory, Source: Reinventing Schools, The Technology is Now. Url: http://www.nas.edu/nap/online/techgap/welcome.html

***The Jason Project***

Source: http://www.nas.edu/nap/online/techgap/k-12net.html

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# Building A New Educational System

*(Continued from page 1)*

organize parties, to help hang posters on walls, to help out in the cafeteria, to go on field trips, or to help organize the big PTA fund-raising events. Instead these parents come, to offer their technology "visions" which very often are "learning" and "teaching" visions, sometimes they bear technology "gifts", and always they are ready and willing to offer free advice on how to make schools and classrooms into better places of learning. They come well-intentioned, enthusiastic and totally convinced that new advanced technologies will make a difference to their children's attitudes towards formal learning and to all children's successful learning. They also come convinced that any rational human being and especially an educator will accept their vision and embrace it enthusiastically.

Few take the time to go into a classroom to watch a teacher teach twenty-five students or go into a principal's office and listen to the choices they are confronting. Few really understand the "system" of education they are seeking to change, and even fewer the nature of change in this kind of system. Most do note quietly to themselves or more openly among themselves when a computer is idle in classroom or used for "drill and kill" purposes only. Most become impatient and many become disillusioned and reach the same conclusion that Steve Jobs has and like him decide that private schools might be better places for their children.

## *The Unchanging "Look-and-Feel" of Schools*

Steve Hodas, in his seminal work entitled, *Technology Refusal and the Organizational Culture of Schools*, writes,

*"For nearly a century outsiders have been trying to introduce technologies into high school classrooms, with remarkable consistent results. After proclaiming the potential of the new tools to rescue the classroom from the dark ages and usher in an age of efficiency and enlightenment, technologists find to their dismay that teachers can often be persuaded to use new tools only slightly, if at all. They find further that. even when the tools are used, classroom practice—the look-and-feel of schools—remains fundamentally unchanged. ".* ❶

Steve notes that schools are complex environments, with certain value systems and power structures. He suggest that they are "intentional systems for preserving and transmitting information and authority, for inculcating certain values and practices while eliminating others." Steve Hodas goes on to describe the clash between the cultures of change, a subset being technologists, and the culture of refusal, those in the school who resist change because they perceive it challenges their value system and base of authority. Steve suggest that schools "can never be independent of the values of society at large; if those change, then schools must" or become irrelevant or be replaced.

## *Society and School Change*

Traditionally, society did not encourage schools to lead revolutions or to be cutting edge laboratories. Public schools were created to provide basic skills and knowledge that would allow children to become productive workers and citizens. In a way, schools were given the task of providing the basic common knowledge sets necessary to operate in mainstream society.

Schools are entirely dependent on localities for their funding. Local school boards and local taxpayers and voting citizens play a very major role in the "look-and-feel" of schools. Their control of the "purse" often pressures school administrators into compromise and conformity. Teachers have very little power, if at all in the "look-an-feel" of school, although they are often the favorite scapegoats. They can individually elect to change the "look-and-feel" of their classroom and many do but they do so at their own risk, and sometimes at their own peril.

Back in the 1950s, it required the National Guard and Federal marshals to open up white schools to black children in Little Rock, Arkansas. The doors did not swing open when the Civil War concluded or the day that the US Supreme Court ruled "separate but equal" unconstitutional. Once the doors were opened, Little Rock schools and others around the country started the process of "educating" both white and black children together , teaching tolerance, teaching multiculturalism, and teaching equality.

*(Continued on page 3)*

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# The Changing World of Education

*(Continued from page 2)*

Certainly there are instances where school leaders take more leading social positions but in those instances those leaders are subject to the same forces of possible resistance that teachers in classrooms are who decide to cross that line and on their own change the "look-and-feel" of school.

## *Forces For Change*

Today, many schools in the United States and in other countries around the world are flinging open their doors to technology and to change. The external forces calling for change are powerful. In his State of the Union Message, William Clinton, the President of the United States endorsed the concept of charter schools as a way of improving public-sponsored education. The Virginia Assembly is now considering education to allow charter schools in the Dominion and in January New Jersey Governor, Christine Whitman signed into law legislation permitting 135 charter schools to open in the Garden State.

However, it is not just a matter of external forces urging change, it is also a matter of educators themselves realizing that the time has come and that many things must be handled differently, including the way schools regard technology. The Newark School District recently signed a $1.25 million contract last week with the Sylvan Learning Systems of Columbia, Maryland to run the remedial education program at three local high schools through June 1997. ❷ In 1995, Delaine Eastin, the California Superintendent of Public Instruction, outlined a plan to create "Challenge School Districts."❸ Challenge School Districts are exempt from customary legal and fiscal constraints and in return and can negotiate waivers of the State Education Code with the DPI. In return these schools are expected to:

- Close School Campuses to Protect Students
- Adopt Measurable Content and Performance for every subject and at every grade level,
- Increase mandatory graduate course requirements,
- Ensure that every graduate meets requirements for the Golden State Achievement Certificate,
- Set Standards for safe, clean, well-lighted, high-tech schools,
- Create A Parent-School Compact signed by every parent,
- Have an Individual Learning Plan for each Child,
- Give Schools more Decision-making authority

In further action, the Superintendent appointed a technology team to make specific recommendations by January 31, 1996 for integrating technology into curriculum, the classroom, and the community, including wiring every classroom in California by 2001.

## *The Coming Revolution*

Schools are complex institutions that have changed very slowly, so slowly they seem to the outside observer to be static. However, they are no longer static. The "look-and-feel" of schools are changing , and will likely change even more dramatically as the culture of refusal yields to the culture of change in mainstream society and that culture empowers schools to transform themselves into complex and dynamic systems of learning in an interconnected dynamic global system of learning.

Central to this change is the rapid deployment of advanced communications, computing and networking capability, the so-called global information infrastructure. Steven Hodas declared that the last technologies to have a defining influence on the general organization and practice of schooling were the textbook and the blackboard. Electronic publishing and networking are not only impacting on the general organization and practice of school but are also fundamentally helping to change the very definition of school, teaching and learning on a worldwide basis.

Ironically, Steve Jobs tossed in the towel just when it is all getting interesting. Hopefully he will come back to help those educators that he inspired who are leading this revolution within the schools and finding increasing support throughout the entire system. They need his help so that together they can create a common vision of the New School.

❶Steven Hodas, *Technology Refusal and The Organizational Culture of Schools*. URL: http://homepage.saeas.upenn.edu/~cpage/techref.html

❷New York Times, *Lure of Education Market Remains Strong for Business*, January 31, 1996, p.A1

❸California Department of Education, Press Release, 9-7-95, URL: gopher://goldmine.cde.ca.gov:70/00/C_D_E_Info/News_and_Announcements/Supt._Delaine_Eastin/Reform_9-7-95

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# TAKING FIRST STEPS

The Educational Resources Information Center (ERIC) is a US national information system designed to provide K-12 educators, parents, and anyone with an interest in K-12 education access to a wealth of education-related information and knowledge. ERIC was established in 1966, and is supported by the U.S. Department of Education, Office of Educational Research and Improvement (OERI), and The National Library of Education.

The ERIC system includes: the ERIC database, AskERIC, the National Parent Information Network, ERIC Clearinghouses on a variety of subject areas, such as: Art Education, Information & Technology, Reading, English and Communication, Educational Management, Counseling and Student Services, Assessment and Evaluation, Child Care, Elementary and Early Childhood Education, Rural Education and Small Schools, Urban Education, Social Studies/Social Science Education, Science, Mathematics, and Environmental Education.

***The ERIC database,*** the world's largest source of education information, contains summaries of more than 850,000 journal articles and documents. The database can be accessed via the Internet through the World Wide Web (http://ericir.syr.edu/ERIC/eric.html) and Gopher (gopher://vmsgopher.cua.edu.:70/11gopher_root_eric_ae:[_search]), and is also searchable at most university, research , and large public libraries. For a list of public Internet access points to the ERIC database, send an e-mail message to ericdb@ aspensys.com.

***AskERIC*** is a personalized Internet-based education service managed by The Eric Clearinghouse on Information & Technology at Syracuse University. AskERIC offers:

- A Question and Answer Service
- The AskERIC Virtual Library
- Internet Access to the ERIC database

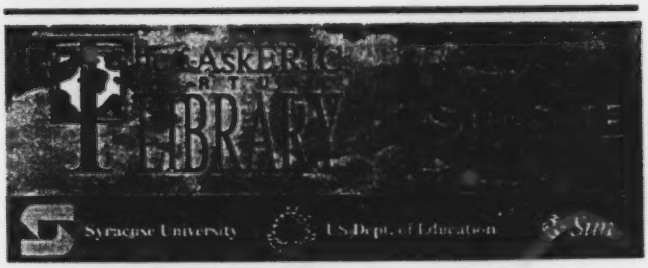
Anyone with an education-related question, can send an e-mail message to:

**askeric@ericir.syr.edu**

and receive an answer in approximately 72 hours. The answer might be a full text of one or more research summaries called ERIC Digests, the results of a short ERIC database search, or the addresses of relevant Internet Gopher sites and listservs.

For a one-stop entry point to the ERIC system, including the ERIC database, point your web browsers to:

**http://www.aspensys.com/eric2/welcome.html**




***The AskERIC Virtual Library*** is located at:

**http://ericir.syr.edu/#1**

Here one can find **InfoGuides** on a variety of subjects including for example: CelticHarp, Homeschooling, Financial Aid, How Schools Use the Internet, EthnicGender Bias, Shakespeare, Science Fiction, Electronic Books, Chemistry, etc. The InfoGuides provide information on electronic newsletters and journals, listservs, gopher and ftp sites housing relevant information.

The Virtual Library also provides access to a wealth of lesson

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# A QUICK TOUR OF THE ERIC SYSTEM

plans including, subject-specific lesson plans, CNN Newsroom Daily Lesson Plans, NASA's SIR_CED Education Program, Newton's Apple Educational Materials, School Library Media Activities Monthly, Discovery Networks' Educator Guide, Lesson Plans from StemNet and the Minnesota Valley National Wildlife Refuge. It also contains the latest postings to popular education discussion groups such as K12Admin and LM-NET, access to Civnet, an international gateway to information on civic education, to Quality Education Data surveys of technology usage in U.S. public schools, .and access to information on educational conferences, electronic journals, books, reference tools, internet guides and gopher and library catalogs.

***The National Parent Information Network*** **(NPIN)** is sponsored by two ERIC clearinghouses:the ERIC Clearinghouse on Urban Education at Teachers College, Columbia University, New York City and the ERIC Clearinghouse on Elementary and Early Childhood Education at the University of Illinois at Urbana-Champaign. The purpose of NPIN is to provide information to parents and those working with parents.

To access NPIN, gopher to ericps.ed.uiuc.edu, or if you have web access point your browser to:

`http://ericps.ed.uiuc.edu/npin/npin-home.html`

Here one can access ***Parent News*** which is a journal providing short articles and summaries of key educational journal articles and research reports on a variety of subjects of interest to parents. For example, the December 1995 issue contained information on:Siblings and Fights, Safe Art Materials for Children, Recent ERIC Digest on Adolescent Girls, and Exceptional Parent Involvement Programs.

The NPIN Web site also provides access to Parenting-L, an Internet discussion list on topics related to parenting children. To subscribe to Parenting-L , send an email message to:

`listserv@postoffice.cso.uiuc.edu`

In the main body of the message, write:

`subscribe PARENTING-L Yourfirstname Yourlastname`

Parents can also send questions to AskEric and find other resources of interest. Questions can be sent to Parents AskERIC at::

`askeece@uiuc.edu`

There are numerous other online services offered by ERIC including access to information in ERIC Clearinghouses, Adjunct Clearinghouses, ERIC Support Components, Publishers of ERIC Material, and ERIC Information Retrieval Services. For those with web access, point your browser to:

`http://www.aspensys.com/eric2/barak.html`

Internet locations for Select ERIC Components:

*Adjunct ERIC Clearinghouse for Art Education*
http://www.indiana.edu/~ssdc/art.html

*Adjunct ERIC Clearinghouse for Child Care*
http://ericps.ed.uiuc.edu/nccic/nccichome.html

*Adjunct ERIC Clearinghouse for Clinical Schools*
gopher://ericir.syr.edu:70/11/Clearinghouses/Adjuncts/ACCS

*Adjunct ERIC Clearinghouse for ESL Literacy*
gopher://ericir.syr.edu:70/11/Clearinghouses/Adjuncts/ACLE

*Adjunct ERIC Clearinghouse for Law-Related Education*
http://www.indiana.edu/~ssdc/lre.html

*ERIC Clearinghouse on Assessment and Evaluation*
http://www.cua.edu/www/eric_ae/

*ERIC Clearinghouse on Information & Technology*
gopher://ericir.syr.edu:70/11/Clearinghouses/16houses/CIT

*ERIC Clearinghouse on Education Management*
http://darkwing.uoregon.edu:80/~ericcem/home.html

*Oryx Press (publisher of Current Index to Journals in Education)*
http://www.oryxpress.com/

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# INFOBYTES

## STUDENT TECHNOLOGY LEADER'S COMPETITION

Online Inc., publisher of MULTIMEDIA SCHOOLS magazine, recently issued a call for nominations for the second annual Student Technology Leader's Competition. The purpose of this award is to honor outstanding students who have made exemplary and innovative use of information technology in their schools and communities. This award will recognize those students, who in the eyes of their teachers and peers, serve as technology leaders with projects created and maintained by the students themselves.

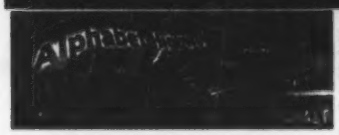
Nominations are now being accepted for the competition and three students will be chosen to attend the 1996 National Educational Computing Conference (NECC'96) in Minneapolis, Minnesota, June 11-13, 1996. Winning students will present their projects to those attending the conference and receive an award. Modest and reasonable travel expenses will be reimbursed for the winners and one chaperone each by MULTIMEDIA SCHOOLS magazine.

This competition is open to all students attending a public or private school full-time in the continental United States. Students will compete in one of three categories based on grade level -- elementary (K-5), intermediate (6-8), and secondary (9-12). Teams of students may be nominated; however, travel expenses are only available for one student and chaperone for each of the three categories.

To enter the competition the student must be nominated by a teacher, school media specialist, or school administrator. For more information and nomination guidelines contact:

Deneen Frazier
Student Technology Leaders Competition
107-B W. Carr St.
Carrboro, NC 27514
NRGconsltg@aol.com
Tel: +1 919/ 929-2913

## CHECK OUT ALPHABET HIGHWAY



Schools having web access and their own server are invited to participate in the Alphabet Highway Project, a project sponsored by the U.S. Department of Education under the READ*WRITE*NOW! Initiative. This project is intended to help school-age children discover the power of the Internet via an assortment of interactive web-based activities, including online mentoring, guided discovery, competitions, and other activities.

The Alphabet Highway transports young learners (grade level 4-8) to CyberCities and CyberCenters. CyberCities are locations where general topics like science and sports can be found; cybercenters are located within CyberCities and provide more specific information such as in the science. CyberCenters are located in CyberCity Neighborhoods. For example, in the Science CyberCity one might find the zoology or the meteorology neighborhood. The Centers are places to find all sources of information on those subtopics.

Students must obtain a learner's permit to drive down the Alphabet Highway, and as they master tools and materials, they are granted higher license levels. This is an extremely interesting and worthwhile project.

An overview and other important information on the Project can be found at: **http://www.udel.edu/ETL/Alphahwy/contents.html**
For more information, write to:

Professor Richard L. Venezky
Alphabet Highway
Willard Hall Building-211
Univesity of Delaware
Newark, DE 19716
E-mail to: **venezky@eecis.udel.edu**

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# INFOBYTES

## YOUTHCAN'96

Youth CaN, Youth Communications and Networking, is an initiative to demonstrate how networking can empower youth and focus their attention on critical environmental issues. It is open to elementary through high school students and teachers. Last year's Youth CaN event brought together over 1,000 students and teachers for a day of workshops on how telecommunications can be used in student environmental work.

This year's event will have workshops ranging from planting native flowers to hands-on experience developing WWW pages for student environmental work. There will also be opportunities to participate via IRC chat, POW WOW and Apple's video-conferencing on the Internet.

The Conference will be held at the American Museum of Natural History in New York City on April 26th from 10:00 a.m. - 1:30 p.m.

For more information about Youth CaN:

E-Mail:
For general information send an e-mail note to: `youthcan-info@igc.apc.org`
For a Registration Form or if you have specific questions contact: `youthcan@igc.apc.org.`
Tel: +1 212-769-5039; Fax: +1 212-769-5239
Point Web Browsers to the I*EARN Home Page at: `http://www.iearn.org/iearn/`

## SPIDER OR FLY—A WEB COMPETITION

The SPIDER OR FLY? contest is an invitation to explore the relationship between networking technologies and the human being. The contest is all about social responsibility and using the power of networking to create some good in society.

The best of the entries will be published by O'Reilly & Associates.

### *Prizes*

First prize: $2500.
Four second prizes: $500 each.
Five third prizes: $100 each.

If any prize is not awarded due to lack of meritorious entries, the associated prize money will be donated to the Wilderness Awareness School, Redmond, Washington.

### *Contest Themes*

The contest's themes are those of the NETFUTURE newsletter. To subscribe to this free newsletter, send the following email message to:

`listproc@online.ora.com`

`subscribe netfuture (full name)`

NETFUTURE can also be found on the Web at:
http://www.ora.com/staff/stevet/netfuture/

The themes of the contest include:

- What, within you and me, drives the success and progress of the Net?
- How does technology determine us and ow do we determine technology?
- Does it matter how we form all those little habits that shape our interaction with computers
- Does it matter when we support, through our purchases and use, new technological capabilities that exist solely because the massive machinery of research has made them possible
- How are we being affected by computerized technology in our self-image, our personal relationships, our attitudes toward community?
- Is the computer affecting education as advertised, or is it redefining what it means to learn and teach-and in ways we have not yet fully recognized?

Make your entry relevant to the themes, persuasive, original in thought, and effective in expression.

Send email entries to **contest@ora.com.** They must be received by midnight, Eastern Standard Time, April 30, 1996. Or, send hard-copy entries to:

SPIDER OR FLY?
O'Reilly & Associates
90 Sherman Street
Cambridge MA 02140, USA

Hard-copy entries must be postmarked no later than April 30, 1996. (No entry will be considered official until a signed, hard copy of the Permission Form is received at the above address.

Winners will be announced May 31, 1996.

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# Online Learning Adventures

## *Childhood Adventures*

Children growing up in the fifties and sixties, often traveled to exotic places in their imaginations. Books and National Geographic magazines, and to some extent television were their primary sources of visual and textual description and information. Learning was mostly passive and the only opportunity for real-time or first-hand interactivty with the actual environment and people or objects existing in it was through physical travel.

> *Today we have a certain primitive media for kids...In terms of their sensory intensity, these are like roller coaster rides. Kids love roller coasters, for natural reasons. But roller coasters only go around and around in circles. Kids need media that they can go places with. They need the virtual equivalent of a kid's bicycle. Training wheels for cyberspace.*
>
> Speech By Bruce Sterling
> *Convocation on Technology and Education*
> Source: About The Project Central America Page, http://informns.k12.mn.us/~crobertson/pca_project.html

Today, young learners are experiencing the thrill of "running rapids on the Nile," the bone-chilling cold and isolation of living in Antarctica, the wonders of a Mayan tomb, and the lushness of a tropical rainforest in ways far different than earlier generations. They still read books and magazines, watch television, and dream about becoming explorers, but are also now using global networks to:

- talk via the Internet with first-hand observers and real life thrill-seekers as well as field scientists in the act of their risk-taking and discovery;
- explore virtual environments via virtual reality programs that open new dimensions of real world environments ;
- remotely manipulate via the Internet objects such as robots, cameras, and other computer-controllably machines that are situated in remote environments .

Essentially, advanced technologies are allowing young learners to become explorers and adventurers in a very real and interactive sense.

## *A Brief History of Online Adventures*

Some of the most interesting Internet programs and projects for young learners are those that seek to create opportunities for interactive, empowering online adventures. One of the first of these online adventures took place several years ago when an American educator Bruce Daley of Las Vegas, Nevada arranged to have "network" talks via e-mail with Australian Scientist who at the time was working in Antarctica. This project spawned many other Antarctica and online projects as well as a whole new generation of online adventures, using new tools and capabilities such as videoconferencing and virtual reality.

In the beginning, in the days that is before the world wide web, the typical online adventures involved e-mail exchanges between children and scientists or adventurers. The adult telementors would respond to student questions and often send daily or weekly field reports. Interactivity was achieved via human-to-human communications.

Today, e-mail and human-to-human communications remain a vital part of online adventures, however, the world wide web and other technologies offer new options and possibilities. Using the web environment, organizers of online adventures can now offer teacher guides, curriculum materials, photo and video archives, and videoconferencing and audio tools as well as collaboratory and screen-sharing capabilities.

These new capabilities allow students not only to engage in synchronous communications but also the power to become an active participant in the remote environment.

## *Some Common Elements of Successful Online Learning Adventures*

There are certain common elements of successful network-based learning adventures including,

- The adventures support multidisciplinary and often multicultural learning,
- A robust online curriculum is created which often includes references to printed material, videos, tv programs, CD-ROMs, laser discs, computer software, and to new technology tools that support investigation and exploration,
- A clear and concise timeline, agenda or itinerary,
- A team of telementors, with at least one having some experience in education
- A local hands-on, real field experience like counting butterflies, or measuring rainfall, or real laboratory experience.

Hang on to your seats as we take a tour of Online Adventures for today's young learners and tomorrow's scientists, explorers, and discoverers.

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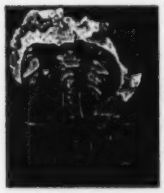
# adventure.online

*adventure.online is a free service of event.media designed to bring adventure and adventure learning to K-12 classrooms and Internet explorers. adventure.online features exclusive expeditions, adventure news (Expedition Focus), and entertaining games. It also provides links to other adventure learning sites. The adventure.online home page is found at:*

**http://www.adventureonline.com/about.html.**

## *RUNNING THE NILE*
## *(An Online Kayak Expedition)*



In January 1996 a team of kayakers began their two-month attempt to kayak down the Victoria Nile River in Uganda, Africa. If successful this would be the first time paddlers have "conquered" this great river. Previous such attempts have not met with success.

RUNNING THE NILE is an adventure.online project that intends to provide a unique opportunity for educators to expose their learners to the mysterious and majestic continent of Africa. Through real-time content delivered via the Internet, RUNNING THE NILE creates a curriculum framework for mainstream Social Studies and Science classrooms.

All online programming is provided FREE OF CHARGE!, and teacher resources Include:

- Journal Updates from the Team in Africa
- Water Quality, Topography, and Life Science Data from the Nile River
- Lesson Plans and Classroom Activities
- Photos, Tips & Templates for Multi-Media Presentations
- Other Resources for the Nile Classroom
- Ask the OnLine Expert
- Ask the Team - Questions to the Team on the Nile

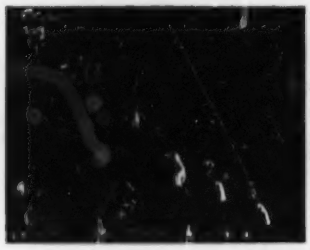
For further information on RUNNING THE NILE send e-mail to:

**Nile@eventmedia.com**

or visit the Running the Nile World Wide Web site at:

**http://www.adventureonline.com/nile/index.html**

## *PROJECT CENTRAL AMERICAN*



Project Central American is a two-month 1900 mile learning adventure designed collaboratively by the Minnetonka Public Schools and the Bush Educational Leaders Program.

The Project web site is located at:

**http://informns.k12.mn.us/~eroberts/pca/**

The web contains teaching materials such as classroom resources, Central American maps, a photo and video gallery, and information about the cycling team that is embarking on this two month adventure through Central America.

The classroom resource area contains:

- Classroom activities designed to help students explore history and geography, and science and language arts,
- A Bibliography on materials on Central America .
- Journey highlights
- Information on the Individual Countries Visited
- Spanish lessons
- Journal Reports
- Links to other Adventure Learning Webs

Students an use interactive software package, combined with real-time telecommunications such as e-mail/telecomputing, satellite telecast (video and audio), and facsimile to track and communicate with the cycling team.

*(Continued on page 10)*

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# Tracking Butterflies and Exploring Mayan Ruins

Journey North is an annual favorite Internet-based learning adventure for elementary and middle school students. During the course of this project, students gain an understanding of wildlife migrations, seasonal change, as well as an appreciation for other cultures lifestyles and localities through network-based interpersonal communication.

Beginning on Groundhog's Day (February 2nd) students will follow the "arrival" of spring in the continent of North America. Classrooms from around North America will report observations from their localities to other classrooms around the world.

In this project, students will follow the migrations of: monarch butterflies, robins, bald eagles, loggerhead sea turtles, peregrine falcons, gray whales, humpback whales, loons, orioles, whooping cranes, caribou and migratory Bats of the Sonoran Desert. Satellites will assist the students in tracking the migrations. Animal locations will be pinpointed using transmitters attached to the animals that emit these data readings to orbiting satellites which in turn download this information to other sites around the world and to classrooms via the Internet.

In addition to the migrations, these students from diverse environments will collaborate together doing comparative studies of the natural world. They will observe the physical signs of spring in their localities through studies of changing daylight and temperatures.

In 1996, there will be two levels of participation.

LEVEL ONE, NEWS REPORTER

In Level 1, students are invited to become a Journey North News Reporter and to share their wildlife observations over the Internet. Schools can register as official observation posts by sending an e-mail message to:

`jn-register@learner.org`

One can also go to the Journey North Home page and register directly from there. The home page is located at:

`http://www.ties.k12.mn.us/~jnorth/jn-info.html`

Registration is free.

LEVEL TWO, INTERNET FIELD TEAM

In Level 2, students and schools are given more responsibflities and more multidisciplinary activities to undertake.

The Internet Field Teams must pay a $39 per class registration fee. For this fee, the participant teams will receive printed materials including a 50-page Teacher's Manual with 54 interdisciplinary lessons that can be used throughout the 4-month program. A Journey North Migration Map (34" X 29") is also included.

Internet Field Team students work on coordinated interactive projects with other classrooms across the Northern Hemisphere, and will participate in weekly "Ask-the-Expert" interviews with Journey North Scientist.

For more information about registration, point web browsers to: `k12.mn.us/~jnorth/register-info.html` or contact: jnorth-info@learner.org. For information about last year's project, point browsers to: `http://www.ties.k12.mn.us/~jnorth/jn95/index.html`.

Journey North is an Annenberg/CPB Math and Science Project in partnership with TIES (Technology and Information Educational Services), the National Fish and Wildlife Foundation, and Hamline University's Center for Global Environmental Education located in St. Paul, Minnesota.

MayaQuest'96 is an interactive learning expedition designed for grades 4-12. Students are asked to help unravel the mystery, "Did the ancient Maya Civilization Collapse?"

In the spring of 1995, the first MayaQuest team visited archeological sites in Mexico and Central America. Students participated in the cycling adventure as well as followed the journey back in their classrooms via Internet reports.

In 1996, Dan and Steve Buettner will lead the expedition in the exploration of ancient Maya ruins and will use laptop computers to communicate their first-hand observations and field findings with learners around the world.

Students and teachers from remote sites will be able to communicate with the expedition team as well as chat with other students and teachers around the world participating in the project.

Any one can follow the progress of the team for free via

*(Continued on page 11)*

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# JASON VII, Adapting to A Changing Sea

*(Continued from page 10)*
the Internet but to become an Interactive Explorer Site

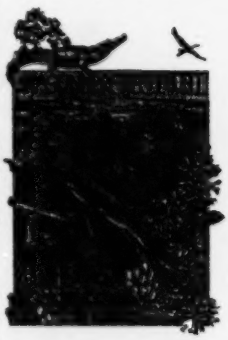
there is an $85 subscription fee which includes: direct interaction with the MayaQuest team, weekly lesson

plans delivered by e-mail, comprehensive teacher resource guide, MayaQuest CD-ROM, and a poster and map of the area of team exploration.

For further information, call +1 800-375-0055, or send e-mail to: `mayaquest@mecc.com` or direct your browsers to: `http://mayaquest.mecc.com/MQII.html`

The Jason Project has emerged as one of the most popular interactive explorations for the past several years. Each year Jason scientists take on new challenges. JASON I explored the Mediterranean Sea, JASON II explored The Great Lakes, JASON III explored The Galapagos Islands, JASON IV explored Baja California Sur, JASON V explored Planet Earth, JASON VI explored Island Earth, and now JASON VII will take learners to the Florida Keys to explore how life adapts to a Changing Sea.

This year's JASON Project VII, Adapting to a Changing Sea.will investigate living at the edge of the sea, an area that provides habitats and food for the majority of the world's population in addition to the many aquatic organisms residing there. During JASON VII, students and teachers will join Dr. Robert Ballard, the creator of the Jason Project to explore the shallow water habitats in Southern Florida.



The Expedition started January 20 with a team of scientists led by John Hunt who will study several organisms that inhabit Florida Bay and by another team of scientists headed up by Dr. Frank Mazzotti and Laura Brandt who will investigate the ecology of the American crocodiles.

The second Expedition will begin in April. A team headed by Dr. Robert Ballard will use remotely operated vehicles and submersibles to map geologic structures in the Florida Keys, and Dr. Bob Hueter, Dr. Jim Bohnsack, and Dr. Jerry Wellington will lead teams of scientists studying sharks, fish, and corals while in the undersea laboratory Aquarius.

Two videos programs will be produced on each expedition and aired during the expeditions. These live broadcasts will allows students and teachers from around the world gathered at JASON Project Primary Interactive Network Sites and JASON Network Sites to ask JASON scientists questions.

The JASON Classroom Network will offer supplemental programming for JASON VII, including six satellite broadcasts, a series of three Professional Development programs designed to help teachers use the JASON VII Curriculum, and a copy of JASON VII curriculum. This year the Distance Learning Associates, Inc. (DLA is assisting JASON to help connect individual schools.
For information on the Classroom Network contact Distance Learning Associates at +1 800-786-6614.

JASON Online Systems provides electronic resources for students and teachers on the Internet. There are three main components: the JASON News and Discussion Groups, the JASON Project Gopher, and the JASON Project Web Pages. For more information on JASON Online point your web browsers to:

`http://seawifs.gsfc.nasa.gov/JASON/HTML/ONLINE_home.html`

You can also gopher to:

`gopher.jason.bridgew.edu`

A Guide to JASON VII Programming is located at:
`http://seawifs.gsfc.nasa.gov/JASON/HTML/EXPEDITIONS_JASON_7_PROGRAM_GUIDE.html`

For general information about the Project go to the JASON VII Home Page at:

`http://seawifs.gsfc.nasa.gov/JASON/HTML/EXPEDITIONS_JASON_7_home.html`

*(Continued on page 16)*

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# NOAA On The Nets

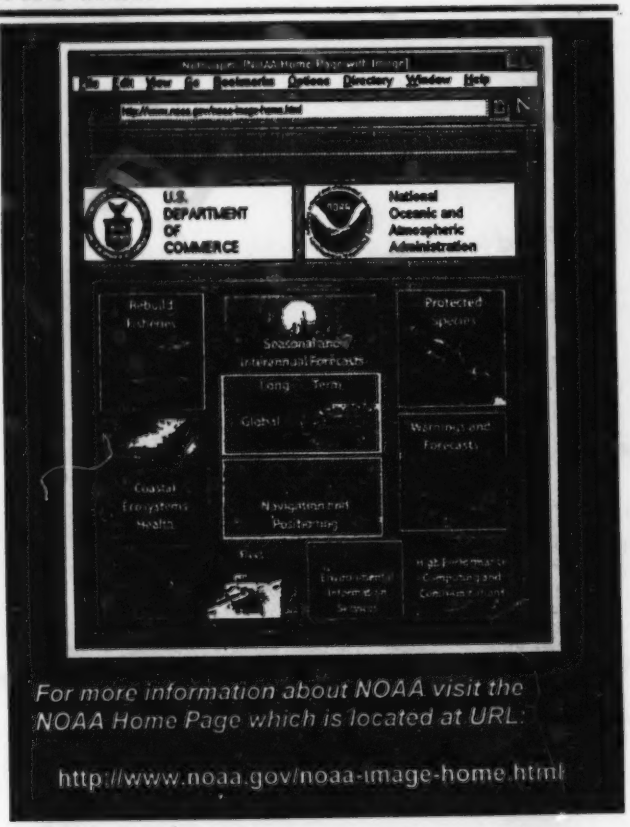
High schools using CU-SeeMe videoconferencing are invited to interact with scientists from the National Oceanic and Atmospheric Administration's (NOAA) Office of Ocean Resources Conservation and Assessment (ORCA) in a series of online interactive conferences. The Global SchoolNet Foundation will assist NOAA in recruiting and preparing schools for their Internet videoconferencing experience.

Conference discussion topics will be selected from the following:

- Pollution discharges to the nation's estuaries and offshore waters
- The physical and hydrologic characteristics of the Nation's estuaries
- Pollution sampling in coastal sediments and bottom dwelling fish and invertebrates
- Assessing damage to the natural environment from oil and hazardous material spills in coastal waters.
- The shape of the ocean bottom.

This will be a chance for high school students to learn about science directly from the people who have made science discovery part of their lives. NOAA is conducting this project as an experiment to better understand the needs of teachers and students in this topic area, the appropriate level of content, the best format for the videoconferences, and evolve a relationship with the educators.

The conferences will be held between March and June 1996; the exact times and dates will be arranged once all the participant schools are selected.


U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
For more information about NOAA visit the NOAA Home Page which is located at URL:
http://www.noaa.gov/noaa-image-home.html

Requirements:

- Schools must have a direct connect to the Internet (T-1 is preferred, but 128 ISDN or a 64 KB line will probably work)
- Schools must have a either Macintosh with AV capability or a PC with Windows and a video board; in addition, schools will need a video camera that is connected to the computer and can send and receive video images.tools should download (FTP) Cornell's CU-SeeMe videoconferencing software from gated.cornell.edu
- Participants will be expected to review and adhere to the "Guidelines for an Effective CU-SeeMe Conference" — —http://www.gsn.org/gsn/articles/article.videoconf.html

NOAA will provide some materials to the teachers prior to the video conference so that students will be prepared to ask questions of the NOAA scientist(s) conducting the video conference.

Format of Conferences: A 5-10 minute opening presentation will be delivered by the NOAA scientist to introduce the topic and explain the purpose of why NOAA conducts work in this area. This will be followed by a discussion of the topic and questions and answers with the students for 30-35 minutes.

Schools will be expected to publish a 1-2 page summary of how this activity enhanced learning experience.

If you are interested in the NOAA Scientist-on-Tap Program, please send a message to: noaa@gsn.org by February 10, 1996. Include ALL of the following information:

```
Teacher Contact:
Full Name-
Email-, Phone-, Fax-
Location of School-(City, State, Country)
Type of Internet connection (T-1, 128 ISDN, 64
KB)?
Type and model of the computer that will be
used for videoconferencing?
Experience:
What is the grade level of students who will
participate?
Are you CURRENTLY connected, equipped, and
READY to do CU-SeeMevideoconferencing?
If so, when would you be available for a prac-
tice session?
```

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# KidSat/Project YES—A Youth Empowering Project

In September, the friendly folks at NASA's Jet Propulsion Laboratory in Pasadena, California initiated KidSat, a three-year pilot education program designed to engage students from around the globe in an interactive exploration of the frontiers of space. KidSat, Project YES (Youth Enhancing Space) will allow students to operate instruments and download images in real-time from the Shuttle, and in the future, from MIR, the International Space Station.

## *The Pedagogic Vision: Empowerment*

KidSat is fundamentally an experiment in certain kind of learning, i.e. empowered learning.. The project is based on the fundamental belief that young people are natural explorers and learn best when they are architects of their own learning environment. Dr. JoBea Way of NASA's Jet Propulsion Laboratory(JPL) and the KidSat principal investigator states, "*The underlying philosophy of this program is to stimulate young people's interest in learning by giving them their own piece of the space program.* " Students will operate and design instruments aboard the Shuttle and MIR, frame their own inquiries and use the data in multidisciplinary studies.

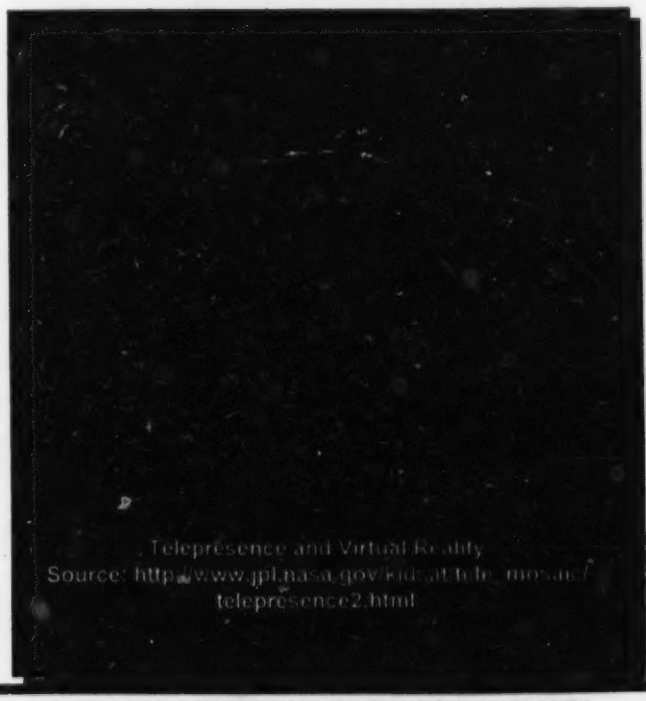
## *The Mission Control Structure*

KidSat is based on a mission control structure. A KidSat mission control "gateway" will be staffed by students and will communicate with NASA's Mission Control Center in Houston. It will also serve as a communication gateway to other participating schools. Student mission control centers will be located at numerous school sites around the country. Other students in other schools not directly involved in a mission operations center can access data from the project via the Internet.

## *The Pilot Program*

Three middle schools are participating in the initial phase of the pilot program. Students and teachers from these schools which include Samuel Gompers Secondary School in San Diego, California, Buist Academy in Charleston, South Carolina, and the Washington Accelerated Learning Center in Pasadena, California will work with scientists from JPL and the University of California in San Diego (UCSD) as well as educational curriculum specialists from John Hopkins University Institute for the Advancement of Youth (IAAY) to develop an interactive exploration program. JPL will develop remote-sensing instruments and cameras to be used by the students as well as manage the overall KidSat program, UCSD is responsible for the mission operations, and John Hopkins for developing the curriculum, teacher training and the evaluation component.

*(Continued on page 14)*



Telepresence and Virtual Reality
Source: http://www.jpl.nasa.gov/kidsat/tele_mosaic/telepresence2.html

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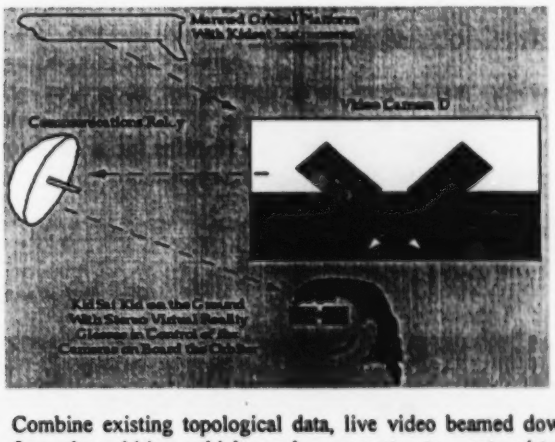
# Telepresence ,Virtual Reality, and Learning With Imagery

*(Continued from page 13)*

## *Telepresence and Virtual Reality*

One of the hopes of the scientists involved in the KidSat project is to allow students to explore space as the astronauts do in shuttle orbit. With this end in mind, they are exploring telepresence and virtual reality. There are currently three areas of consideration:

1. Beam live video camera images down from the shuttle or MIR to a student wearing stereo virtual reality glasses with the capability of controlling the cameras on board the orbiting vehicle.




2. Combine existing topological data, live video beamed down from the orbiting vehicle, and a computer to create virtual reality.

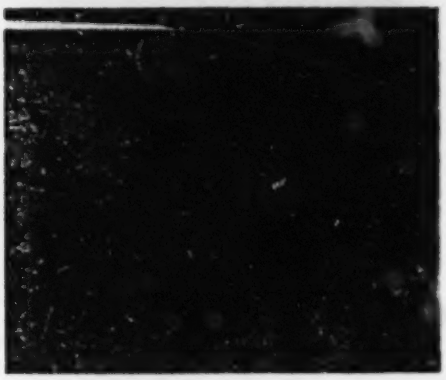
3. Students can use a modem or the Internet to access the KidSat Storage Archive Computer where all the downloaded data is archived and that is archived and pick a flight plan. The flight plan would then be transmitted to the user's computer and when used with virtual reality raster glasses would allow virtual explorations of any area that has been scanned by KidSat instruments.

For a more detailed description of telepresence and these KidSat options under consideration, point web browsers to:

`http://www.jpl.nasa.gov/kidsat/tele_mosaic/telepresence2.html`

## *Uses of Remotely-Sensed Data and Imagery*

Data and Imagery from the KidSat instruments will be able to support learning in a number of curricular areas including science, mathematics, history, current affairs, and art. The imagery will yield information on the impact of natural and man-made disasters such as earthquakes, volcanoes, forest fires, and wars. It can assist in studying human and animal habitats . It can offer powerful geographic and geological images that afford a different perspective in the study of our changing earth. It can also offer access to up-to-the-minute weather imagery.



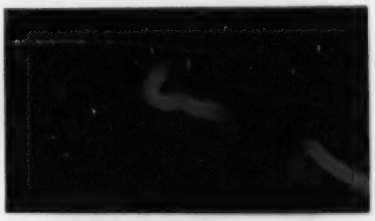
**A Crater Viewed From the Shuttle**
**Source: http://www.jpl.nasa.gov/kidsat/curriculum_mosaic/curriculum_ideas2.html**

## *The KidSat Web Site*

The KidSat Web site is under development but definitely worth a visit. It can be found at:

`http://www.jpl.nasa.gov/kidsat/`

In the words of the JPL organizers, KidSat will let young learners "go to outer space without leaving earth " and in the process one generation will pass on the thrill of space exploration to another.



**Source: http://www.jpl.nasa.gov/kidsat/tele_mosaic/go_to_space2.html**

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## MARCH 1996

### 4-6 March. Midwest Education & Technology Conference. 13th Annual

Cervantes[illegible] America's C[illegible]i. For more info[illegible]

Conference [illegible] Road, St[illegible] or call +1 314-692-1250.

### 13-16 March. SITE 96: The 7th International Conference of the Society for Information Technology and Teacher Education.

Phoenix, Arizona. For more information write to:

**SITE 96/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, or call +1-804-973-3987, or FAX: +1-804-978-7449, or send e-mail to: AACE@virginia.edu.**

### 17-20 March. ICTE'96 Technology and Communications: Catalyst for Educational Change.

New Orleans, Louisiana. Delegates from over forty countries, and from many different positions in the world of education and training will attend.

ICTE NEW ORLEANS '96
Post Office
UTA S
Arlin USA
Tele ;
Fax:
E-ma
Worl
www.

### 22-26 March. 10th Annual Conference of the European School Consortium

The 10th conference of the European Schools Project (ESP) will be held in Leuven (Belgium) at the Maria-Theresia college of the Katholieke Universiteit Leuven, which is located in the center of the city. This year's program will focus on the use of the World Wide Web (WWW) within the school, environment and within ESP.

For more information contact:

**Prof. H. Christiaen**
**Kandidatuurcentrum**
**Celestijnenlaan 200A**
**B-3001 HEVERLEE**
**Phone : +32-(0)16-327075**
**Fax : +32-(0)16-327997**
**E-mail: Hubert.Christiaen@kc.kuleuven.ac.be**

### 2-4 May. 1966 10th Annual VSTE

## MAY 1996

### Technology Conference

Hotel Roanoke and Conference Center, Roanoke, Virginia. For more information contact:

darkin@pen.k12.va.us or call +1 804-320-3424

### 6-11 May Fifth International World Wide Web Conference

Paris, France at CNIT, one of the largest conference and exhibition centers in Europe. The conference will give a comprehensive picture of all current activity and recent developments around the WWW. For more information:

**URL:http://www.w3.org/pub/Conferences/WWW5/**

## JUNE 1996

### 11-13 June. NECC'96, Call of the North

Minneapolis Convention Center, Minneapolis, MN. Hosted by Technology and Information Educational Services (TIES) and Sponsored by National Educational Computing Association in cooperation with University of Minnesota, St. Cloud University, and Twin Cities AECT. For more information write to:

NECC'96/TIES, 2665 Long Lake Road, Suite 250, Roseville, MN 55113-2535

### 25-28 June INET'96, The Internet: Transforming Our Society Now., Montreal, Canada

INET96, the [illegible] Conference of the [illegible]

For [illegible]
Email
URL: [illegible]ences/inet96

## JULY 1996

### 6-12 July. I*EARN International Meeting:

Hotel Summer Hill in Budapest, Hungary. The conference will represent the collective talents of I*EARN teachers, youth-service facilitators and students from across the globe. Hundreds of participants will meet in Budapest to further the work of educational telecommunications and to use the face-to-face meeting to build greater personal links with international colleagues. Requests for further information or conference registration can be forwarded to:

The I*EARN GLOBAL SECRETARIAT at <iearn@iearn.org>

### 24-27 July. Second International Conference on the Learning Sciences, ICLS 96

Northwestern University, Evanston, Illinois. Hosted by the Association for the Advancement of Computing in Education. ICLS will bring together professional[illegible] academic and industry[illegible] sights on fo[illegible]g to serve [illegible]pecial focus [illegible]ons in both e[illegible] more inform[illegible]

http://[illegible]l
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E-Mai[illegible]
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# Other Interactive Adventure Sites

*(Continued from page 11)*

Antarctica has captured the imagination of most young explorers. There are a number of fine projects involving this region that were created especially for K-12 learners. BLUE ICE, Focus on Antarctica is a rather new entry by the folks at MECC Software.

Between January 2 and March 31, 1996, K12 learners and teachers can undertake an interdisciplinary study of of this special continent. Each week focuses on different study topics. For example, the week of January 29-February 2, student's are exploring the concept of hypothesis and apply this concept to the interrelationship between Antarctica animals and the Antarctic environment. Students are looking at two different hypothesis that attempt to answer why penguin populations change in size from year to year.

Access to the web site is free. The site contains a useful guide to Antarctica Resources available in print and video, as well as hot links to other online resources on a variety of relevant topics, highlights from an e-mail discussion group wherein teachers of grades 2-12 share activities, questions and comments about their Blue Ice experience, a Kid Corner where children share their works on Antarctica,.information on Antarctica treks, a page for high school students where participating high schools can share their projects and work, and information from scientists and other guests with excerpts of their online discussions that occurred with schools subscribing to the project.

To participate fully in the project and interact directly with the scientists and invited expert guests, schools need to subscribe. The cost of subscription is $85 and this fee includes a teacher resource guide, a newsletter, two-access to guests of the week, subscription to listservs, a 800# hotline and a directory of other participant schools.

For more information,
Tel: + 1 800-375-0055
E-Mail: ThinkSouth@aol.com
Web Site: http://www.mecc.com/blueice.html

Web Sites for Some Other Interesting Online Projects:

*Live From Antarctica, A Passport to Knowledge Project* sponsored by NASA. URL:http://quest.arc.nasa.gov/live-from/livefrom.html

*Creative Kids in Kamchatka* a TIES project that links classes of 5th and 11th grade students from Kamchatka with other children around the world. URL:http://www.informns.k12.mn.us/kamkids/index.html

*In Search of the Scarry Safari: A Global Adventure.* Url: http://gsn.org/gsn/scarry.home.html

NetTeach News is the chosen newsletter for [illegible] networking educators worldwide. It provides a forum for the exchange of information about how advanced networking technologies are changing society, and in part, the way we teach and learn and deal with one another. It is published as a platform for many cable television and satellite interactive travels to [illegible] around the globe and a pathway to [illegible] global living classroom via [illegible].

NETTEACH NEWS is published ten times a year.

Annual Subscription Prices:

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Multiple disk guides are available [illegible] more orders of the printed version [illegible] to one address.

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NETTEACH NEWS

# ON CREATING A DEMOCRATIC INTERNET (PART THREE ) COMMERCIALIZATION

*This is the third article in the "On Creating A Democratic Internet" series. In NetTeach News Volume 3, Number 4, we looked at the major role the US Department of Defense played in the creation of ARPANET, the forerunner network to the Internet, and the TCP/IP protocol development. In NTN Volume 3, Number 6, we looked at the significant role the US National Science Foundation played in the evolution of a global network for researchers and learners. In this article, we will consider the privatization of the Internet and the implications of a Commercial Internet for society, learners, schools, and educational systems.*

On the evening of April 30, 1995, the NSFNET backbone was silently and unceremoniously decommissioned and replaced by a commercial system of Internet backbone and access providers. ❶ On that evening, the NSFNET's Acceptable Use Policy that had restricted commercial use of the NSFNET backbone ceased to be relevant and a new era in the Internet evolution commenced, the so-called era of the Commercial Internet. In fact, the commercialization of the Internet had begun prior to this date and NSF's decision to privatize the NSFNET in part reflected a recognition that the commercial sector had a viable Internet presence and legitimate role to play in the future growth of global networking.

*(Continued on page 3)*

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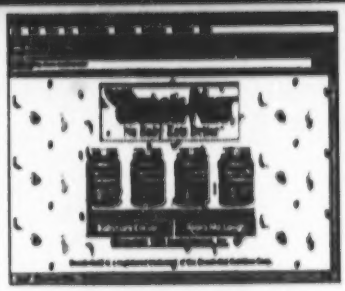

**Beech-Nut, No Baby Eats Better**

Source: http://www.beechnut.com/

*The heart of the Web will be commerce, and the heart of commerce will be corporate America serving custom products to individual customers.*

Steve Jobs An Interview in **Wired**, Feburary 1996 , p.102

**WARNER BROS HOME PAGE**

Source: http://www.warnerbros.com/

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# The Democratic Internet—By the People and For The People

In the beginning, way back in the days of ARPANET, there was little need of leadership over the evolution and growth of internetworking capacity. To the extent, there was a helm, it was a small coalition of US government-paid researchers, a sort of elite technonerd club. These men worked out the technical standards necessary to make the network operate but didn't concern themselves with any social, legal -, or economic implications of internetworking deployment worldwide.

Times have changed and the 1990s ushered in the era of the new Internet, a global networking capacity serving global citizens including men and women, young and old, all nationalities and cultures. Commercial companies now operate and own the network backbones and the US government and many other governments around the world are paying customers. The World Wide Web and WWW browsers such as NCSA Mosaic and Netscape catapulted the Internet to the front page of newspapers around the world including the financial rag sheets where Internet stocks have soared.

The growth of the Internet is exponential. In January 1996, Mark Lottor counted some 9.5 million Internet hosts in his now famous Internet "Walks". A recent survey conducted by the U.S. Department of Education revealed that over fifty percent of American's public schools are online and 75 percent of those not online are planning to go online soon. The Internet is far from ubiquitous but is nonetheless fast-becoming a household and schoolhouse word and fixture.

This month President Clinton signed into law The Telecommunications Act of 1996. This law creates a deregulatory environment to spur on the growth of Internet-related businesses and it also includes a provision to control the content of Internet materials that can be accessed by minors. The constitutionality of aspects of that provision is now under review by a Federal Court in Philadelphia but clearly the US government and other governments around the world are displaying increasing "interest" in the social, legal and economic consequences of the growth and diffusion of internetworking capabilities in society.

Several organizations rose to claim the leadership gauntlet over the evolving Internet including the International Engineering Task Force or IETF, the Internet Architect Board (IAB), and the Internet Society. The IETF is concerned with standardizing TCP/IP protocols. Prior to 1992, the IAB was the guiding technical body but no longer plays any significant role. The Internet Society is a technical professional organization primarily governed by American technocrats, many who are ARPANET veterans, with little experience and desire to deal-with broad societal applications and the social, economic and legal ramifications.

The CIX or the Commercial Internet Exchange emerged in 1992 to represent the interests of the commercial access providers who are interested in promoting the Internet for business as well as personal use. This organization has played a major role in providing individuals and businesses with Internet access. The Consortium for School Networking (CoSN) and the IETF's ISN-Working Group (ISN-WG) also emerged in the early seventies to represent the unique interests of school networking.. The relatively new World Wide Web Consortium, W3C, was created in 1995 to provide international institutional support for world wide web developments since this area was largely ignored by ISOC and other organizations despite the fact that the WWW is the Mecca for most new users. The Internet Law and Policy Forum (ILPF) is providing an international focus for the consideration of the legal issues regarding the Internet and its societal impact.

The International Telecommunication Union, UNESCO, and UNCTAD are all displaying increasing interest in the Internet and beginning to provide some institutional guidance—this is a positive sign that should be encouraged. The ITU, UNESCO, and UNCTAD can provide the international institutional frameworks necessary to mobilize world resources to promote an equitable, ethical, and rational Internet growth. There is also a need for more national and local dialogue and attention to the social, economic and legal implications of internetworking at a national and community level.

What is clear from this picture is that no single institution or government is now capable of controlling the future growth and development of the Internet. This is because the Internet is fundamentally democratic, open and global. It demands a coalition leadership that is equally democratic, open and global. Indeed, the biggest threat to global society would be an Internet like ARPANET, shaped and controlled by a single nation and a single elite group of technocrats with little understanding or accountability to mainstream society.

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# The Commercialization of the Internet

*(Continued from page 1)*

## *The Control of Private and Commercial Traffic Prior to April 1995*

Prior to April 30, 1995, the NSFNET backbone carried private as well as public traffic. However, individuals and private companies that utilized the NSFNET backbone were asked to comply with the NSFNET's Acceptable Use Policies that restricted the use of for-profit traffic to research purposes only.

This restriction applied only to the use of the NSFNET backbone and did not apply to use on connecting networks. NSF advised connecting networks to "formulate their own use policies," and assigned the NSF Division of Networking and Communication Research and Infrastructure the task of resolving any questions about the Acceptable Use Policy or its interpretation.❷

These connecting networks were the major access providers to the Internet for individuals and private companies and much of this traffic in the United States was routed via the NSFNET and thus subject to Acceptable Use restrictions. AUP enforcement required monitoring traffic flows and the nature of usage for a rapidly increasing number of private users. This situation led to confusion, abuses, and only in the most egregious cases of abuse an actually decision to deny an individual access.

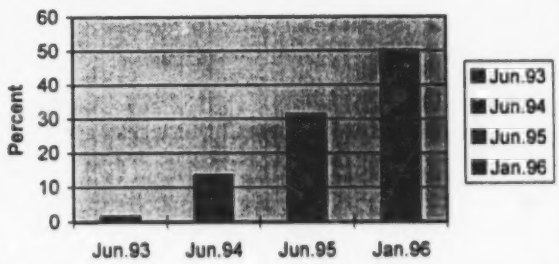
## *The Role of Commercial Internet Access Providers*

In 1992, the Commercial Internet Exchange, or CIX was created as a non-profit, trade association for the commercial Internet access providers. The Association was created "to assist in the development of standards and interconnection protocols that will provide a basis for greater interconnection to public network for the industry as a whole."❶ This Association and its members provided companies and private individuals access to the Internet without the restrictions of the NSFNET backbone, and thus contributed significantly to the growth in commercial and private Internet traffic and usage.

## *The Role of the World Wide Web*

In 1989, Tim Berners-Lee, a computer scientist working in CERN—the European High Energy Physics Laboratory, introduced the world wide web, a distributed heterogenous collaborative multimedia information system.❸ However, it wasn't until 1993 when Marc Andressen released the Alpha version of NCSA X-Mosaic, a hypermedia, hypertext world wide web browser, that the World Wide Web or W3 gained any significant popularity.❹ Since 1993 interest in the World Wide Web has grown steadily, particularly evident in the web activity of commercial enterprises.

**A Comparison of the Number of .Com Web Sites As A Percent of the Total Web Sites In 1993-1996**




Source: The statistics used to create this graphic were provided in *Measuring the Growth of the Web*, by Matthew Gray of net.Genesis. This report is found online at:
http://www.netgen.com/info/growth.html

Mathew Grey of net.Genesis specializes in tracking the development of the world wide web. In June 1993, he counted 130 web sites, and of that total.com sites comprised 1.5 %. In June 1994, the number of web sites had grown to 2,738, and the percent of those that were .com sites had increased to 13.5 percent. In June 1995, 23,500 web sites were counted and .com sites comprised 31.3%. In January 1996, some 90,000 web sites were counted with .com sites comprising 50.2%.❺

By mid-1993, Internet visionaries such as Anthony Rutkowski, then Vice President of the Internet Society and Director of Technology Assessment for Sprint, were declaring Mosaic as a "Killer Application" and the growth of the world wide web as historic. Mr. Rutkowski wrote, "Annual traffic growth for the WWW service alone this year (1993) exceeds 300,000 percent! Nothing in the history of human electronic communication has scaled so massively - not only in terms of traffic, but also in geographical ubiquity."❼

*(Continued on page 8)*

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# THE TELECOMMUNICATIONS ACT OF 1996

*Under this law, our schools, our libraries, our hospitals will receive telecommunication services at reduced costs. This simple act will move us one giant step closer to realizing a challenge I put forward in the State of the Union to connect all our classrooms and libraries to the Information Superhighway by the year 2000 —not through a big government program, but through a creative ever-unfolding partnership-led by scientists and entrepreneurs, supporting by business and government and communities working together.* (Remarks by U.S. President William Clinton At The Signing of The Telecommunications Act of 1996)[1]

On February 8, 1996, U.S. President Clinton signed into law The Telecommunications Act of 1996.[2] This Act:

- seeks universal access to advanced telecommunications services,
- significantly revises the 1934 Communications Act by among other deregulatory action allowing Bell Telephone companies to compete with long-distance telephone companies.
- seeks to open up competition in the cable tv industry and the broadcast industries.
- calls for a V-Chip to be installed in every new television set ;
- establishes criminal penalties for people who permit indecent or obscene materials to be distributed to minors online. .

## Significant Provisions Specific To K12

*Reduced Telecommunication Services Rates for Schools*

The Act seeks to advance universal service by promoting quality service at affordable rates and access to advanced services. All providers of telecommunications services are requested to make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service

The Act states,

- "All telecommunications carriers serving a geographic area shall, upon a bona fide request for any of its services that are within the definition of universal service under subsection (c)(3), produce such services to elementary schools, secondary schools, and libraries for educational purposes *at rates less than the amounts charged for similar services to other parties.* The discount shall be an amount that the Commission, with respect to interstate services, and the States, with respect to intrastate services, *determine is appropriate and necessary to ensure affordable access to and use of such services by such entities.*"—
- The Commission Shall Establish *Competitively Neutral Rules*—"To enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunications and information services for all public and nonprofit elementary and secondary school classrooms, health providers, and libraries;

*Obscenity and Violence (Communications Decency Act of 1996)*

The most controversial aspect of the Act for the Internet community and for schools, libraries, and other organizations that use networks with minors is the section entitled The Communications Decency Act of 1996. This is a modified and compromise version of the Exon Bill introduced in 1995. The Act states,

"Whoever—in interstate or foreign communications knowingly—(A) *uses an interactive computer service to send* to a specific person or persons under 18 years of age, or *uses any interactive computer service to display* in a manner available *to a person under 18 years of age, any comment, request, suggestion, proposal, image, or other communication that, in context, depicts or describes, in terms offensive as measured by contemporary community standards,* sexual or excretory activities or organs, regardless of whether the user of such service placed the call or initiated the communications; or (2) knowingly permits any telecommunications facility under such person's control to be used for an activity prohibited by paragraph (1) with the intent that it be used for such activity, *shall be fined under title 18, United State Code, or imprisoned not more than two years , or both.*

The legislation further states that any

*"person that has taken, in good faith, reasonable, effective, and appropriate actions under the circumstances to restrict or prevent access by minors to a communication specified in such subsections, which many involve any appropriate measures to restrict minors from such communications, including any method which is feasible under available technology"*

will have a defendable position in the event of any criminal prosecution.

## Economic Implications of Deregulation and Universal Service Provisions

The deregulation of the communications industry should lead to a more competitive environment and to better services at more affordable prices. In particular, this regulation will encourage continued innovation and growth of advanced communication systems including the Internet. Special provisions regarding affordable access to schools and libraries should help schools in their initial efforts to connect to global networks. Schools, however, will need to work with parents and local community leaders to ensure that Public Utility Commissions are aware of their real economic needs when

*(Continued on page 5)*

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# IMPLICATIONS FOR SCHOOLS

reasonable rates are being formulated.

## The Implications of the Communications Decency Act of 1996

The provisions of the Law related to the criminality of providing minors access to obscene or pornographic materials are the potentially the most troublesome to schools. The vagueness of the wording, particularly such sections as:

*"any comment, request, suggestion, proposal, image, or other communication that, in context, depicts or describes, in terms offensive as measured by contemporary community standards"*, and

*"knowingly permits any telecommunications facility under such person's control to be used for an activity prohibited "*

causes some legitimate worry about possible prosecution for teachers, librarians, and even to parents who allow minors to access global networks via computers in their charge.

In interpretation it is possible that schools using blocking technologies or having clearly stated Acceptable Use Policies might be exempt from prosecution, or exonerated if brought to trial, assuming that a prosecutor, jury or a judge consider these measures as " *taken, in good faith, reasonable, effective, and appropriate actions under the circumstances to restrict or prevent access by minors.*" However, the mere possibility of criminal prosecution caused by the inherent vagueness of this language will likely have a chilling effect on many schools and libraries, particularly in very conservative communities. Moreover, this provision might lead to various degrees of censorship, where any materials with any possibility of being construed as objectionable would be excluded from use. In the worst cases scenario, this might include web sites on advanced human anatomy or web sites or discussions lists intended for high school age students that provide quality information on sexuality, or birth control.

This provision is under challenge. Shortly after it was enacted into law, the American Civil Liberties Union filed a civil suit which resulting in U.S. District Judge Ronald L. Buckwalter ruling that the provision barring indecent material was unconstitutionally vague. ❶ In late February, more than 20 corporate and trade organizations initiated a civil suit that was filed in the United States District Court in Philadelphia.❷ This suit was joined with an the earlier suit. The Justice Department, which is named in both suits, has temporarily suspended any prosecution of this law, until a judicial ruling has been issued.❸

The American Library Association is concerned about the potential impact of this law as are many other educational organizations that are actively promoting networking for societal learning purposes..❹ However, there are many community groups that have fought for much more stringent provisions and are determined to control and deny access to minors. The fear is that many parents and others in the community who are perhaps ignorant of the benefits of networking and the limited number of pornographic sites on the Internet will oppose the networking of schools and ultimately deprive their children and others of new opportunities for learning.

Notwithstanding the outcome of the civil suits, it is essential that all those who are interesting in promoting school networking work to educate the general community about real benefits. Moreover, educators must establish a system that rationally integrates networking technology into the mainstream learning system and must establish a clear contractual framework for network use that involves parental and minor consent. Blocking or filtering technologies might be considered, particularly in elementary schools to avoid any "accidental" access of objectionable materials, although it should be noted that these technologies are not full-proof.

Perhaps, the most hopeful development is the PICS, Platform for Internet Content Selection. system now under development in the World Wide Web Consortium. (In this Issue, See Pics, A World Wide Web Rating System, p. 14) Not only does this system allow for flexible rating systems but also allows for quality selection.❼

Even the PICS system will not necessarily resolve the fundamental problems faced by schools and libraries in highly politicized areas where the mere act of choosing a rating system might cause divisiveness. Nor will it address concerns of libraries in general that choosing "rating systems" might constitute a form of censorship. ❽

As more and more schools are networked, the hope is that more and more quality web sites and other material will appear on the Internet, and moreover the use of the technology in the classroom or library by minors will be refined, documented, and assessed. This information should help to dispel some societal fears and opposition.

Footnotes:

❶Remarks by President at the Signing of The Telecommunications Act of 1996 Ceremony on February 8, 1996. See URL:http://www1.whitehouse.gov/WH/EOP/OP/telecom/release.html

❷The Telecommunications Act of 1996, See Url:http://www1.whitehouse.gov/WH/EOP/OP/telecom/telecom-top.html

❸Judge Blocks On-LineSmut Law Enforcement, Washington Post, February 16, 1996, B1

❹On-Line Services Join Indecency-Law Suit, NY Times, Monday February 26, 1996, D2

❺udge Blocks On-LineSmut Law Enforcement, Washington Post, February 16, 1996, B1

❻PICS. See URL:http://www.w3.org/pub/WWW/PICS/

❼ Must Reading—The Internet Advocate, A Web-based Resource Guide for Librarians and Educators Interest in Providing Youth Access to the Net. See URL: http://silver.ucs.indiana.edu/~lchampel/netadv.htm

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# INFOBYTES

## PSINet TO MERGE INTERCON AND SOFTWARE VENTURES

On February 13, 1996, PSINet Inc. announced that it is merging its two wholly-owned software subsidiaries—InterCon Systems Corporation, Herndon, VA., and Software Ventures Corporation, Berkeley, CA. Both companies produce Mac Internet software.

Commenting on the merger, Bill Schrader, the CEO of PSINet, said, "The combined staff of more than 100 individuals constitutes the finest groups of Macintosh developers and marketers in the industry, as well as a strong PC development and marketing group." Schrader noted that this decision to consolidate comes as a result of growing uncertainty about Apple Computer's future and the the decline in the Macintosh market share. The consolidation will allow InterCon to expand its leadership position in the high-performance Macintosh computer environment domestically as well internationally.

The new organization will continue to sell, market and support Software Ventures' leading products, Internet Valet and Microphone. InterCon produces TCP/Connect II for Macintosh, TCP/IP Connect II for Windows, Planet X—an X Window System client for Macintosh, InterServer Publisher—the industry's first integrated (WWW,FTP, Gopher) Macintosh-based server application, InterPPP II&tm—allows Macintosh users to connect to remote networks using PPP and fully supports TCP/IP and Appletalk, and the newly-released NFS/Share provides seamless access to UNIX servers for Macintosh users, among other products.

**For more information about InterCon software contact:**
**URL: http://www.intercon.com/**
**Info@intercon.com**
**Phone: 1-800-468-7266(Sales)**
**Phone: +1-703-709-5500 (Main Phone Number)**
**Fax: +1 703-709-3360**

## MICROSOFT NEWS: Encarta On The Record Launched

On February 21, 1996 the premier cybercast of Microsoft's *Encarta On The Record* was conducted. In the first show, Linda Ellerbee, the veteran journalist and host of this all-new monthly Internet interview show and cyberforum interviewed Senator Bill Bradley of New Jersey, "MTV News" reporter and anchor Tabitha Soren, and former senator Paul Tsongas of Massachusetts. The topic of the month, "So what is the next generation of voters seeing when it looks at the state of politics today?"

Each month Ms. Ellerbee will explore other equally interesting and provocative matters with other notable guests. Guests and online participants will be invited to go "on the record"and become part of an online national debate.

Encarta On The Record will be cybercast live from the @Cafe in New York City on the third Wedenesday of every month at 9:30 pm EST. @Cafe is New York City's premier "cyber cafe". Fifteen of its dining tables have desktop computers that are linked to the Internet via a T1 line.

To optimally view the cybercast, Microsoft recommends downloading a free copy of their Internet Explorer World Wide Web browser. This is available at: <http://www.microsoft.com/windows/ie/ie.htm>
To hear the cybercast, Microsoft recommends downloading Real Audio from Progressive Networks. This software can be obtained at: http://www.realaudio.com/release/download.html now in Beta, supports Windows, Macintosh, and UNIX players.

For more information about Encarta On The Record point your web browsers to:<http://WWW.MSN.COM/encarta/otr/>
For more information about @Cafe in New York City point to: <http://www.fly.net/>
For more information about Real Audio: <http://www.realaudio/com/>

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# INFOBYTES

## TEACHING WITH TECHNOLOGY—A SPECIAL NEH OPPORTUNITY

The National Endowment for the Humanities (NEH) recently announced a special three year grant program designed to support teaching the humanities with information technologies. This new grant program seeks to:

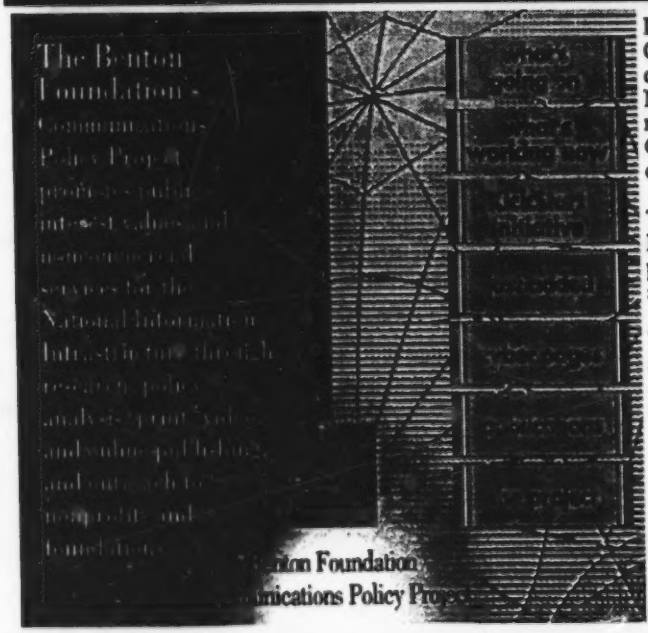
- Increase the number and usefulness of technological resources with rich, high-quality humanities content, particularly for schools and colleges.
- To improve the effectiveness of such resources by shaping them around sophisticated, creative, and engaging approaches to learning and by testing them in classrooms.
- To increase significantly the number of teachers who can integrate such humanities materials into their daily teaching.

Projects should address specific humanities topics and have a national impact on humanities teaching and learning on a wide and varied audience. Proposals that (1)develop new educational materials, (2) field test and prepare classroom applications of new and existing materials, and (3) enable school and college teachers to integrate new materials and approaches into their teaching will be considered. Proposals that target K-12 education are especially encouraged.

For more information about the program including selection criteria and applications contact:

Staff of the Division of Research and Education Programs
Telephone: +1 202-606-8373
Fax: +1 202-606-8394
E-Mail: education@neh.fed.us
WWW: http://www.neh.fed.us
Director: James Herbert

## Benton Foundation to Continue the Work of the NII Advisory Council




In February, the National Information Infrastructure Advisory Council (NIIAC) completed two years of work with the release of two publications:KickStart Initiative and a policy report, A Nation of Opportunity and a video entitled The National Information Infrastructure and YOU!, hosted by Bill Nye, the Science Guy. The 36-member NIIAC chose the Benton Foundation to continue its work.

The Benton Foundation, which was founded in 1981 by Charles Benton, the son of U.S. Senator William Benton, works to promote the effective use of communications technologies in society.

The Benton Foundation will distribute the NIIAC's documents and will create new information services and forums to help schools, libraries, and community centers to access the Internet and other advanced communications technologies.

To access the NIIAC documents on the Internet, use Benton's World Wide Web site: http://www.benton.org.

To receive document descriptions, information on other Benton resources, or instructions on downloading the documents via gopher or ftp: send e-mail to: kickstart@benton.org, or call Benton's fax-on-demand service at 800-622-9013.

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# The Commercialization of the Internet

*(Continued from page 3)*

In 1995, Brian Fuller, business editor of the Electronic Engineering Times wrote,

"Eighteen months ago, an Internet address was the cutting edge of fashion; now you're dead without one. Companies are rushing to something that last year they couldn't say 10 times fast—World Wide Web—and hanging their respective shingles on that digital facade.."[8]

Today, small mom and pop business, local chamber of commerces, major corporations, and even the Girl Scouts have web sites and many their own web hosts. Commercial web host growth is contributing significantly to the overall growth of the Internet.

## *The Dawning of Internet Business*

In the last few years, a whole new kind of business enterprise and activity has emerged —the Internet Inc.. The Internet Access companies dated back to the creation of PSInet and Uunet Technologies in the early seventies but in the last year local access companies proliferated. Telephone companies such as MCI and Bell Atlantic, cable companies such as TCI and Media General, software companies such as Microsoft and even companies such as EROLs noted for video tape rentals are moving into the Internet access business.

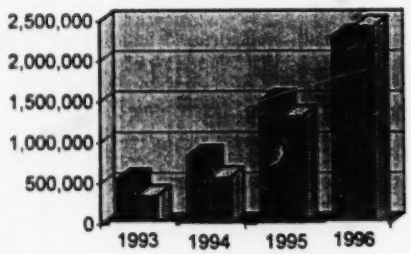
The Internet and the World Wide Web has engendered several other kinds of new businesses including the web design industry. multimedia and web content production companies, web authoring and browsing software developers, firewall software developers, web commercial security and encryption companies, index systems and search engines, and intelligent agents.

The expanding number of Internet users from all populations including K12, higher education, government, corporate, and military has also created a need for Internet trainers and network system consultants. In addition to companies set up to provide hands-on instruction, there are software companies creating CD-ROM and Web-based interactive tutorials, Internet training video production companies and distributors, companies specializing in Internet training workshops and seminars, and finally publishers specializing in Internet books, magazines and training materials.

The Internet has also spawned new virtual businesses and is transforming many established industries such as the publishing industry, the entertainment and gaming industry, retail stores and cafes, record production and distribution companies, online survey companies, and art galleries.

Currently, the demographics of most households with Internet access suggests a significant population of suburban, high-income professionals.[9] However, as the cost of access continues to decline and the cost of computing power, the Internet will become more accessible to a greater number of potential consumers representing most income levels with major purchasing ability. This will likely spawn even more commercial Internet-based activity.

**Comparison of Public and Commercial Hosts Growth, 1993-1996**




Source: This table is based on Statistics from Mark Lottor's January Internet Walks from 1993-1996. URL http://www.nw.com/zone/

## *A Statistical Review of Overall Commercial Internet Growth and Activity*

From 1993 on commercial Internet activity increased steadily. In 1993, Mark Lottor, in his January Internet Walk counted 347,486 .com hosts; in January 1994 this number had increased to 567,686; and in January, 1995 1,316,966 were counted. Today, the largest single host domain is .com, and the 2.4 million .com hosts counted in January 1996 by Mark Lottor,and now constitutes 26 percent of all hosts. [10]

## *The Significance of the Commercial Internet — Threats and Promises*

*New sites on the World Wide Web are cropping up at the rate of one per minute. As it expands at this astounding rate, the Web's colorful entanglement of words, pictures, sound, and motion is briskly becoming more than a new medium. It's more like a parallel universe that mirrors the real world in some ways but exhibits unique properties in others. (Advertising Webonomics 101* by Evan I. Schwartz in WIRED, February 1996, p. 74)

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# The Threats and Promises of NetCommercialism

*(Continued from page 8)*

*I see vast increases in the amount of useful information on the Web and the amount of people it takes to create and develop the information.* (Josh Bernoff, An Analyst at Forester Research, quoted in The Meteoric Rise of Web Site Designers by Trip Gabriel, New York Times, February 12, 1996, p.D1)

When the NSFNET retired last April, many feared that the Internet would be destroyed. Some of the early Internet/ Arpanent architects viewed this event somewhat like the Chinese Kuomingtang Party held the so-called "fall of China" in 1949. The Commercial Internet represents something vastly different than ARPANET or NSFNET. First of all, it is based on a consumer-driven market system and is not an aristocratic-controlled monopoly. Secondly, the commercial Internet is intended for greater, more diversified, more global populations of users and is not intended for the exclusive use of a few. The pre-Commercial Internet was all about TCP/IP and standard-making, and the Commercial Internet is all about user-friendly applications.

Many other people who are not yet networking, indeed many who are technophobic or anti-technology view the commercial Internet and the vision of a democratic Internet skeptically. They rail against "cyberporn" and "cyber crime" and the end of civilization. They fear the Internet as a Wild Wild West primarily populated by renegades, gunslingers, and mavericks who are threaten our youth and eroding our societal values. They see the Internet as porno shops and electronic red-light districts or as an intrusive, ugly electronic billboard.

The Internet and its current most popular component — the World Wide Web, are undeniably changing society, one person, one company, one school, one industry at a time. There are currently an estimated 20 million people worldwide now surfing the World Wide Web and an estimated 40 million using the Internet for e-mail and other purposes . These are modest demographics compared to the total world population or even the total population of those using telephones. However, some microanalysis suggest that these users represent a powerful group with money, intelligence and revolutionary ideas. Many of these Internet users are the risk-takers, the early adapters, and the pioneers who are ready, willing, and eager to explore change in their lives, their professions, their workplace, their professions, and in their communities.

Net pioneers are leading efforts to apply the Internet and find ways to "rationally" use the technology with purpose. These people are teachers, lawyers, doctors, housewives, artists, writers, detectives, retail store managers, and magazine publishers who are exploring this medium and using it to change the way we live, we work, we learn, and we interact. These people welcome corporations,welcome new tools and applications, welcome new users , and above all welcome the opportunity to promote beneficial societal change.

Although most of the commercial web sites are now used for public relations and advertising purposes, there are many that nonetheless contain quality content information that can be used by the K12 community and other citizen learners. In addition, the new online publishers are offering quality products that cannot be accessed via any other medium. Foundations, government agencies, and research communities are also putting up information onto the World Wide Web and the Internet that will benefit K12 teachers and learners as well as the general public and research communities.

## *The Significance of the Commercial Internet — The Impact on Education*

Perhaps no where is the fear of commercialization greater than in the area of education. Many educators and parents fear the commercialization and indeed the democratization of the Internet as the end before the beginning. They see these trends as a sign that the potential of the medium for quality learning will never be realized, and moreover that the Internet will become too expensive to the education community. Ironically, if these fears gain popularity they may be realized because if the education community slacks off in its interest and pursuit of networking capacity there will be less quality web learning sites, less corporate interest in the education market, and less opportunities for the education community to transform itself into co-partners with industry.

### *New Economic Opportunities Networked Schools*

The Internet offers educators new opportunities

- The opportunity to join local corporate and community leaders in creating new technological alliances that support resource-sharing and new education funding models.
- The opportunity to work with other schools, school districts, and school systems to create united positions on significant national, state and local economic policies as well as a mass, and perhaps even consolidated market for new products and services.
- The opportunity to work with corporations as co-partners in product development.
- The opportunity for schools to become more rational and optimal economic enterprises

### *Forging New Equal Partnerships With Industry*

Educators must take a new look at themselves and present themselves in a new way to the corporate world. They must begin by realizing how essential their industry is to the growth of the evolving world and national economies.

*(Continued on page 16)*

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# SOME SPECIAL ONLINE PROJECTS

This Logo was designed by Buffy Sainte-Marie.

The KIDS FROM KANATA project at is a Canadian-originated telecommunications project linking urban and rural First Nations and non-First Nation schools via the Internet. The purpose of the project is to create bridges of understanding between the Canadian First Nations communities and the rest of the Canadian citizenry.

This project started in 1990 as part of KIDLINK, a grassroots telecommunications project that currently brings together over 50,000 children in the 10-15 age group.from 80 countries. The KIDS FROM KANATA initiative was started entirely as a Canadian effort and in its three years of existence has reached over 6,000 Native and non-Native Canadian students.

KIDS FROM KANATA recently formed a partnership with the Industry Canada's SchoolNet project and is also planning to develop links with I*EARN classrooms in Australia and around the world. Canada's SchoolNet Project is a Canadian educational initiative with broad organizational support that aims to promote the use of networking in schools across Canada. I*EARN is a global telecommunications project that seeks to empower teachers and young people through collaboration in meaningful projects.

As part of the Industry Canada's First Nations SchoolNet project/KIDS FROM KANATA alliance, SchoolNet/Industry Canada will cover the membership fee of federally supported First Nations schools in Canada participating in KIDS FROM KANATA project.

For more information on KIDS FROM KANATA and the other mentioned projects visit The Education and Youth Page of the Web Networks/NirvCentre Community Resource Center at: **http://www.web.net/crc/**

The KIDS FROM KANATA page is located at:
**http://www.web.apc.org/KFK/kfkhome.html**

Those without browsing capability can also obtain information about the KIDS FROM KANATA project by sending an email message to:
**education@web.apc.org**

**Children of the Eternal Forest** is a project that encourages people from around the world to help protect and grow forests and flowers for future generations. Children and adults are urged to engage in community planting projects that can transform concrete junk piles into community parks, and ugly and dangerous school grounds into natural areas for education and recreation.

Children of the Eternal Forest is working with The Evergreen Foundation and the Boston Greenspace Alliance in to create projects for schools and school-age learners. The Evergreen Foundation is dedicated to preserving and restoring natural areas in the urban environments and making Canadian schools and communities healthier places to live, learn, work and play. The Boston GreenSpace Alliance's *Schoolyard Greening Workbook, An Activist's Guide to Beautifying Boston's Schoolyards* provides an plan of action and numerous examples of projects that any school can undertake.

A Children of the Eternal Forest discussion list is open to teachers and learners of all ages. This discussion provides a forum to ask questions and share thoughts, ideas, and projects concerning the global forests. To subscribe, send an email message to

majordomo@coopnet.org.

In the main body of the message, write:

subscribe children-of-the-eternal-forest

For more information about Children of the Eternal Forest contact:

The Tree People
12601 Mulholland Dr.
Beverly Hills, CA USA 90210
Tel: +1 8181-753-4600
or visit the World Wide Web Site at: http://www.herbsinblume.com/forests.html

For more information about:

The Evergreen Foundation visit:http://www.evergreen.ca/home.html
The Boston GreenSpace Alliance visit: http://k12.oit.umass.edu/masag/gs0index.html

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# LEARNING ASTRONOMY WITH ASTRONOMERS

## Night of the Comet!

NASA Ames Research Center and the Stratospheric Observatory For Infrared Astronomy (SOFIA) are sponsoring a Net Event for learners and amateur astronomers worldwide called *Night of the Comet.* This is billed as an Internet virtual star party devoted to the near-earth visit of the Comet Hyakutake.

On the night of March 25, 1996 the Hyakutake Comet, the comet discovered in late January, will come within 9 million miles of the planet earth—its closest approach. On that evening the comet will be visible all night long from the U.S., Canada, Europe, and Japan (weather and light pollution conditions permitting). It is also anticipated that the Comet will likely be as bright or brighter than the stars of the Big Dipper.

The Night of the Comet Web Site became operational on February 26th and provides comet images collected from professionals and amateurs around the world. Educators, planetariums, and others can follow the virtual real time path of the Hyakutake Comet, and on the March 25th will be able to communicate with NASA experts using e-mail, chats, and network videoconferencing.

Ames is serving as the communications hub for observations of Hyakutake. For more information about this project contact Bob Hillenbrand, SOFIA Project Educator. Send e-mail to

**bob_hillenbrand@gmgate.arc.nasa.gov**

The Night of the Comet Web Site is located at:

**http://quest.arc.nasa.gov/comet/**

*The Live From the Hubble Telescope Project* is now underway through April 1996. In December, students, educators, and astronomers decided to allocate two orbits to Neptune and its giant storms, and 1 to Pluto.

On Thursday March 14, 1996 at 13:00 EST, a live, one-hour interactive telecast entitle, "Making Your Observations," will connect students to the Space Telescope Science Institute so that they can watch the data-gathering from the Hubble Telescope.
On March 15, the Star Census Classroom Collaboratory will begin. Students will make their own data observations, analyze the data locally, and share their results with other participating students and educators.

On Tuesday, April 23, 1996, at 13:00 EST, a second live interactive telecast entitled, "Announcing Your Results," will enable students to analyze and interpret their observations.

The Live from the Hubble Space Telescope Web Site is located at:

**http://quest.arc.nasa.gov/hst/lounge/index.html**

Further information about the project can be obtained here. There is also a Teacher's Lounge which contains useful learning resources, links to other astronomy pages, a webchat area for educators, and a discussion group; a Kid's Corner, an Image Gallery , and project updates.

To receive updates about the project via e-mail, join the updates-hst email list by sending an email message to:

**listmanager@quest.arc.nasa.gov**

In the main body of the message, write:

**subscribe updates-hst**

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# INTERNET TRENDS by Tony Rutkowski

Sunnyvale CA, USA. The latest results from the most basic and longest continuing measurement of the Internet's size were just released by Mark Lottor of Network Wizards at Menlo Park CA USA. The Domain Survey attempts to discover every host on the Internet by doing a complete search of the Domain Name System. The results were gathered during January 1996. The raw data plus several Network Wizard charts are available at ftp://ftp.nw.com/zone or http://www.nw.com/.

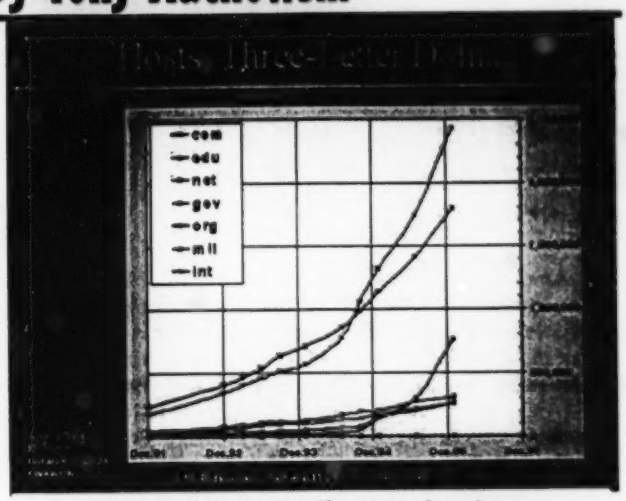
Lottor's measurements show that the Internet currently consists of countless autonomous networks, representing 240,000 domains, with 9,472,000 "advertised" connected computers. Because of the unknown and potentially unlimited numbers of multi-user computers and network or application gateways, as well as the existence of innumerable temporarily connected, non-advertised, or firewall protected machines, it is not possible to establish a complete total or correlate any of this information with the number of end users.

Further processing and analyzing Lottor's data over the past several years reveals the following newsworthy and strategic highlights:

- The figure of 9.4 million hosts represents a current annual host growth rate of 85 percent, and was precisely the predicted number based on the average growth rate over the past four years. In other words, the Internet's exponential growth rate continues unabated.
- Considering the increasing tendency of hiding large numbers of hosts behind firewalls, the actual number of connected hosts is likely far higher.
- Hosts named "WWW" constitute by far the largest and fastest number of hosts - 76 thousand computers and increasing at the annual rate of 2,400 percent.
- The largest single domain is .com with 2.4 million hosts,and now constitutes 26 percent of all hosts.
- Fifty-one country and global top level domains are experiencing annual growth rates in excess of 100 percent.

Among country and global top level domains above the 10,000 mark, the most rapidly growing included: Singapore, .net, Russian Federation, the US domain, Brazil, Finland, Japan, Israel, Italy, Poland, Taiwan, the UK, and Ireland.

- In absolute numbers, the most rapidly growing domains were.com, .net, .edu, UK, US, Canada, Japan, Germany, and Australia - all with six month increases in excess of 100,000 hosts.




**General Magic–Host Three Letter Domains**
**Source: http://www.genmagic.com/internet/trends/sld007.htm**

- **The increases in the US domain are substantially from primary and secondary schools.**
- Without subsequent processing to attribute the three letter global domains to a country previously done by John Quarterman of MIDS <http://www.mids.org/>, it's not possible to determine final country figures. However, it appears approximately that the same 60% - 40% balance between USA versus non-USA, proportions remain. A subsequent strategic note will be prepared if Quarterman derives and makes available this information.
- The domains of 28 countries or territories appeared on the host count for the first time - apparently connecting since July 95. However, these hosts may not necessarily be actually in the country.

Graphic presentations of all these values and trends can be found on the Internet at

http://www.genmagic.com/internet/
ftp://ftp.genmagic.com/pub/internet/trends-v7.ppt PowerPoint v7.0
ftp://ftp.genmagic.com/pub/internet/trends-v4.ppt PowerPoint v4.0

In response to popular demand, "low bandwidth" versions will also be provided in the near future, and this site will be continuously updated with strategic Internet information.

*Tony Rutkowski is the Vice President of Internet Business Development for General Magic, Inc. General Magic is committed to bringing personal intelligent communications to the global society and workplace. Magic Cap and Telescript technologies are two of its products that are fundamentally transforming global communications.*

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# INTERNET TRENDS IN U.S. SCHOOLS

Recent statistics released by the U.S. Department of Education, and Mark Lottor,of Network Wizards suggest that increasing numbers of U.S. public schools are obtaining, and seeking to obtain access to the Internet. Although the relative and absolute numbers of schools with access is increasing, there is some suggestion of an emerging technology gap between schools with large proportion of children from poor families compared to schools with relatively few students from poor families.

## *A U.S. Department of Education Survey*

According to a sample survey recently released by the U.S. Department of Education's National Center for Education Statistics, the number of U.S. public schools now with access, and planning to have access to the Internet in the near future is on the rise. Some fifty percent of the 917 public elementary and secondary schools sampled in the fall of 1995 have access to the Internet, and seventy-four percent of the sample schools that did not have Internet access plan to obtain access in the future.

The report, *A Survey of Advanced Telecommunications in U.S. Public Elementary and Secondary Schools,* was conducted in 1995 by Westat, Inc., a research firm located in Rockville, Maryland., through the National Center for Education Statistics Fast Response Survey System (FRSS). An additional report containing a detailed analyses of the finding from the survey is soon to be released, as is a survey report on advanced telecommunications in private schools conducted in the fall of 1995.

Other keys findings in this report include:

- Access to the Internet varies by school characteristic. Only 31 percent of schools with large proportions of students from poor families have access to the Internet, compared to 62 percent of schools with relatively few students from poor families. Thirty-nine percent of schools with fewer than 300 students had access to the Internet compared to 69 percent for schools with 1,000 or more students. Sixty-five percent of secondary schools in the sample had Internet access compared to forty-six percent of the elementary schools.
- Sampled public schools report an average of 72 computers including those used for both administrative and instructional purposes. However, only 14 percent of all computers in these public schools have Internet access. Schools with Internet access report an average of 12 computers connected to the Internet.
- Although half of the sampled public schools have access to the Internet somewhere in the building, only 9 percent of all instructional rooms (classrooms, labs, and library media centers) are currently on the Internet. This represents a three-fold increase, however, compared with survey findings in 1995 of only 3 percent of all instructional rooms connected to the Internet.

A complete copy of the Survey can be found on the U.S. Department of Education Gopher at:<gopher://gopher.ed.gov:10000/00/publications/elesec/frss/%2351edtab.asc> and key findings and a downloadable formatted copies can be obtained from the U.S. Department of Education World Wide Web site at: <http://www.ed.gov/Technology/starrpt.html >.

## *Mark Lottor's January 1996 Internet Walk*

In January 1996, Mark Lottor of Network Wizards conducted his latest Internet Walk.❶ In his survey, he noted the number of .us hosts had increased from 37,615 in January 1995 to 233,912 . The number of us domains also increased to 4,900.❷ Of this number 1,550 or 32 percent are "k12.[state].us". Last year, the IETF recommended that all K12 schools use the geographic domain naming system using .k12 rather than a generic or regular geographic name. The increase may in part reflect this name change but also and more likely an absolute increase.

Lottor's Internet walk does not go down far beyond the second or third domain name and thus his statistics do not give an indication of actual school user increases. However, in March 1995, Janice Abrahams, John Clement and Mark Parris conducted an exhausting survey and found 80,000 IP addresses in schools.[locality/county].k12.state.us domains.❸

## *Statistical Limitations and Interpretations*

These various statistics surveys on the Internet in schools must be viewed and used with caution. The U.S. Department of Education conducted a very limited survey. Only 917 public elementary and secondary schools were surveyed. This is a very small statistical sample. Lottor makes no attempt to analyze K12 Internet activity in the US or worldwide but some of his raw statistics can be used to provide some good guestimates to relative growth trends. Lottor noted in his survey that the percentage of servers refusing answers or displaying connection problems rose from 20 to 34% in six months. The down time for K12 hosts are probably greater than the average and thus less likely to be successfully surveyed. The Abraham/Clement/Parris study disclosed this difficulty and others surveying the K12 community. In user surveys, there is the added problem that many K12 schools obtain access via commercial providers or via universities or community colleges and are not therefore accounted for in surveys of .k12 domain names. Sometimes these arrangements are temporary and limited in capability. Moreover, the critical question is not just access but how it is used and where it is used.

Footnotes:

❶The report can be found at: http://www.nw.com/. Internet Survey

❷This is based on "Top-level domain names" are generic (EDU,COM, ORG,MIL, INT,NET, GOV) , and the two letter country codes. The US domain hierarchy is based on political geography, that is the "state.city or county, organization or computer name. A special category was established for K12 <school-name>.<district>k12.<state>.US

❸These survey results can be found at: http://k12.cnidr.org/janice_k12/states/states.html

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# The PICS & Web Ratings

In August 1995 following a summer of heated debate about Minors Accessing pornographic materials on the Internet in the U.S. Senate and House, the World Wide Web Consortium (W3C) and the Information Highway Parental Empowerment Group (IHPEG) merged efforts to find a tangible technical means for people to selectively control online content.❶ The new W3C initiative brought together some twenty-three companies and organizations representing academia, publishers, telecommunications companies, Internet and online service provides, and software firms to develop an easy-to-use labeling and selection platform, designated PICS or Platform for Internet Content Selection.

IHPEG, which was formed in July 1995 jointly by Microsoft, Netscape and Progessive Networks. ❷ The World Wide Web Consortium (W3C) is an industry consortium run by the Laboratory for Computer Science at the Massachusetts Institute of Technology. In Europe, MIT collaborates with CERN, the originators of the Web and the Center for High Energy Physics in Europe, and INRIA, The French National Institute for Research.❸ W3C Consortium members include such companies as AT&T, Adobe Systems, Inc., America Online, Compuserve, Delphi Internet, Digital Equipment Corporation, Eastman Kodak Company, France Telecom, Fujitsu Ltd., IBM, MCI, Microsoft, Netscape, Novell, Inc., Prodigy, and Sun Microsystems.

## *The Primary Goals of PICS*

The primary objectives of PICS standards are to facilitate:

- First-Party Rating: Empower content providers to voluntarily label the content they create and distribute on the Internet;
- Third-Party Rating: Empower Multiple independent labeling services to associate additional labels with content created and distributed by others. Services may devise their own labeling systems, and the same content may receive different labels from different systems;
- Ease-of-Use: Empower parents and teachers to use rating and labels from a diversity of sources to control information their children receive..❹

## *The Work of the PIC Technical Subcommittee*

The PICS technical subcommittee has released several major drafts reports that form the basis of the evolving PICS system. In November, two papers were released: *Rating Services and Rating Systems* (and Their Machine Readable Descriptions),❺ which defined a language for describing rating services, and *Label Syntax and Communication Protocols* which defines a general format for labels that permits them to be distributed in three ways: embedded in an html document, sent along with a document from an http server to a client upon request, sent separately from a "label bureau" that runs the http protocol. Recently, PICS issued *PICS:Internet Access Controls Without Censorship*. ❽This report prepared by Paul Resnick of AT&T Research and James Miller, W3C , summarizes the work of the PIC group to date and describes the basic technical system. The latest update to the PICS Label distribution was released in January 1996. ❾ It reported that currently, the PICS label distribution document is "frozen"pending reference implementations. A new version is expected in March.

## *PICS System: How It Works*

The PICS establishes a "values-neutral" infrastructure for Internet content labeling that can be used by parents, teachers, school systems, third-party rating systems, and other organizations to block material deemed "inappropriate" for minors as well as to help users select interesting and high-quality materials.

PICS specifies:

- a standard format for describing a labeling service, the new MIME type application/pics-service. This enables the separation of selection software from rating labels;
- a standard format for labels that includes the URL, which identifies the labeling service and can also include information about the creation and expiration date, and the attributes that describe the resource;
- three ways to distribute labels: embed labels in HTML documents, send labels along with document from the http server upon request from client, a label bureau sends the labels

PICS separates the rating system from the selection system. Any PICS-compliant selection software can read any PICS-compliant labels. A single site or document can actually have many labels and the labels can use non-binary rating scales, for example a value and subject category that assigns a "good" rating for a ten year old and a "good" rating for a sixteen year old.

## *PICS Developers Group*

Most recently PICS created a developers group called PICS-DEV. PICS-DEV is to be a forum for the exchange of information among individuals and organizations that are developing PICS-compatible software and labeling services. To apply for membership, send e-mail to <jmiller@w3.org and presnick@research.att.com. In the message include how you are planning to use the PICS technical specifications to create a compatible product or service.

Footnotes:

❶Announcing PICS: http://www.w3.org/pub/WWW/PICS/950911_Announce/pics-pr.html

❷ IHPEG Page. See URL: http://www.prognet.com/contentp/rabest/IHPEG.html

❸ W3C at URL:http://www.w3.org/pub/WWW/Consortium/

❹Technical Committee Charter, see URL:http://www.w3.org/pub/WWW/PICS/TechCharter.html

❺Rating Systems and Rating Services, See URL:http://www.w3.org/pub/WWW/PICS/services.html

❻Label Syntax and Communication Protocols, See URL: http://www.w3.org/pub/WWW/PICS/services.html

❼PICS:Internet Access Controls Without Censorship, See URL: http://www.w3.org/pub/WWW/PICS/services.html

❽Proposed Updates to PICS Label Distribution, See,URL:http://www.w3.org/pub/WWW/PICS/update.html

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## MARCH 1996

**4-6 March. Midwest Education & Technology Conference.** 13th Annual Cervantes Convention Center at America's Center, St. Louis, Missouri. For more information contact:

**Conference [illegible] 60 Craig [illegible] 3146, or call [illegible]**

**13-16 [illegible]th International [illegible] Society for [illegible]ology and Te[illegible]enix, Arizona [illegible]rite to:**

**SITE 96/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA, or call +1-804-973-3987, or FAX: +1-804-978-7449, or send e-mail to: AACE@virginia.edu.**

**17-19 March First Annual CoSN Conference, "K-12 School Networking on the Emerging Information Superhighway"** Sheraton National Hotel Arlington, Virginia

**For more information:Send an e-mail to <conference@cosn.org> and an electronic version of the complete conference brochure will be sent to you. Additional questions, call +1 (202) 466-6296 ext. 56.**

**17-20 March. ICTE'96 Technology and Communications: Catalyst for Educational Change.** New Orleans, Louisiana [illegible] over forty countries [illegible] ent positions [illegible] and training w[illegible]

**ICTE [illegible] Post[illegible] A Station, [illegible]001 USA [illegible]220; Fax: [illegible]il: icte[illegible] Web: http:[illegible]te**

**22-26 [illegible] Annual Conference of the European School Consortium.** The 10th conference of the European Schools Project (ESP) will be held in Leuven (Belgium) at the Maria-Theresia college of the Katholieke Universiteit Leuven, which is located in the center of the city. This year's program will focus on the use of the World Wide Web (WWW) within the school, environment and within ESP. For more information contact:

**Prof. H. Christiaen**
**Kandidatuurcentrum**
**Celestijnenlaan 200A**
**B-3001 HEVERLEE**
**Phone : +32-(0)16-327075**
**Fax : +32-(0)16-327997**
**E-mail: Hubert.Christiaen@kc.kuleuven.ac.be**

## MAY 1996

**2-4 May. 1966 10th Annual VSTE Technology Conference** Hotel Roanoke and Conference Center, Roanoke, Virginia. For more information contact:

**darkin@pen.k12.va.us or call +1 804-320-3424**

**6-11 May Fifth International World Wide Web Conference.** Paris, France Will bring together web users, developers, researchers from around the world. For registration and other information: Send E-mail to: www5-info@inria.fr
Visit: http://www.w3.org/pub/Conferences/WWW5/fich_html/participation.html

## JUNE 1996

**11-13 June. NECC'96, Call of the North** Minneapolis Convention Center, Minneapolis, MN. Hosted by Technology and Information Educational Services (TIES) and Sponsored by National Educational Computing Association in cooperation with University of Minnesota, St. Cloud University, and Twin Cities AECT. For more information write to:

**NECC'96/TIES, 2665 Long Lake Road, Suite 250, Roseville, MN 55113-2535**

**17-22 June 1996. ED-MEDIA'96 with ED-TELECOM'96.** Boston, Massachusetts. This joint world conference, which is sponsored by the Association for the Advancement of Computing in Education (AACE), spans all disciplines and levels of education and attracts leaders in the field from over 50 countries. For more information:

**On the World Wide Web: http://aace.virginia.edu/aace/info.html or E-mail: AACE@virginia.edu; Tel: +1-804-973-3987; Fax:+1 - 804-978-7449, AACE home page: http://aace.virginia.edu/aace**

**25-28 June 1996 [illegible]96. The Internet: [illegible]ur Society** [illegible]al, Canada [illegible]al Conferen[illegible]

**For fur[illegible]d e-mail [illegible] URL: h[illegible]n-ference[illegible]**

## JULY 1996

**6-12 July. I*EARN International Meeting:** Hotel Summer Hill in Budapest, Hungary. The conference will represent the collective talents of I*EARN teachers, youth-service facilitators and students from across the globe. Hundreds of participants will meet in Budapest to further the work of educational telecommunications and to use the face-to-face meeting to build greater personal links with international colleagues. Requests for further information or conference registration can be forwarded to:

**The I*EARN Global Secretariat at <iearn@iearn.org>**

**24-27 July. Second International Conference on the Learning Sciences, ICLS 96.** Northwestern University, Evanston, Illinois. Hosted by the Association for the Advancement of Computing in Education. ICLS [illegible]ing together professionals [illegible]d industry [illegible]d insight [illegible]rning to se[illegible] special [illegible]novations [illegible]ning. For [illegible]

**http[illegible] icls[illegible] http[illegible]ce E-M[illegible]u Tel:[illegible]**

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# EDUCATION AND COMMERCIALISM

*(Continued from page 9)*

A networked world demands an intelligent and creative work force. Technology-infused schools are better equipped to produce the kind of workers required by industry.

Education is also big business. Apple Inc. has long regarded K12 Education in this light and heavily marketed their products in schools around the U.S. Now new computer hardware and software companies, and the new networking companies are eagerly looking to the nation's schools as the Western corporate world look to the China market in the 1970s when China was "re-opened" to the world. Companies like Microsoft Inc., Bell Atlantic, PacBell, TCI, Cisco, Novell, Sun, AT&T, and MCI have launched new initiatives with schools around the country. Initially, these programs are providing some assistance to schools in their efforts to network but there is a clear understanding that these schools and the parent communities that support them will become major consumers.

Publishing companies are moving online and creating new curriculum for networking teachers and learners. Training and consulting companies are preparing Internet training programs and seminars for educators. Companies specializing in lans, servers, routers, and high-end workstations are scrambling to achieve a presence in education.

In the past, schools and school districts have not effectively used their power to form equal alliances with each other and/or with industry. Networking is equalizing the playing field and providing educators with the kind of information and the capability to enter into new equal relationships with industry and the communities that in effect will allow schools to transform themselves into more rational and viable non-profit organizations.

Commercialism is not to be feared by educators but rather to be used to promote better quality public education and more effective learning. The challenge is for educators to seize the moment not just to acquire networks for learning only but also for decision-making and alliance building purposes.

**********

References:


❶For information on NSFNET's Retirement, see URL: gopher://nic.merit.edu:7043/0/nsfnet/nsfnet.retired

❷The Internet Navigator by Paul Gilster (John Wiley & Sons, New York, 1993) Figure 2.4 NSFNET's AUP, p. 31

❸For information on CIX, see URL http://www.cix.org/

❹For a good history of the World Wide Web, see URL: http://www.w3.org/pub/WWW/WWW/

❺For information about Mosaic, see URL:http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/Docs/help-about.html

❻*Measuring the Growth of the Web* by Mathew . URL: http://www.netgen.com/info/growth.html

❼*Internet's "Killer Applications"—Mosaic and WWW* by Anthony Rutkowski. NetTeach News Vol I, No. 6, November 1993, p.8

❽*Gaining the Network Advantage* by Brian Fuller. EET Mid-Year Forecast:The Network, 1995. See: http://techweb.cmp.com/techweb/eet/docs/f95/network.html

❾Internet Demographics, MIDS. See URL:http://www1.mids.org/ids3/pr9510.html

❿Internet Domain Survey by Mark Lottor. URL:http://www.nw.com/zone/



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NETTEACH NEWS

# A NETWORKING STRATEGY FOR SCHOOL CHANGE

"As the 21st century approaches, a well-developed mind, knowing how to learn, and the ability to put knowledge to work will increasingly determine success in the workplace; fully 60 percent of jobs in 2000 will require a working knowledge of information technologies, Young people who leave school without the knowledge and foundation to find and hold a good job will pay a high price — throughout their working lives." ("Realizing the Benefits," in KickStart Initiative, Connecting America's Communities to The Information Superhighway by The United States National Information Infrastructure Advisory Council. 1996.

Educators are slowly but in increasing numbers recognizing the need for modern technologies in today's schools and classrooms. They are bringing in video, CD-ROM, and networking technologies. However, they are limited by shrinking budgets, and even more by outmoded visions of school, learning, teaching, and the educational "workplace,".and by a woefully limited understanding of the new technologies, especially networking and its unique applications in "knowledge" enterprises and systems.

If schools and school districts are to optimally use modern technologies, those in positions of authority must comprehend the differences between networking technologies and more traditional isolated technologies that have heretofore been introduced into schools primarily for "status quo" teaching and learning such as video equipment, computers, CD-ROM, and video discs, and they must recognize the revolutionary significance of this technology to the workplace in general. Moreover, they must recognize how networking technologies can impact both holistically and dynamically on the school enterprise and the school system. Finally, educational leaders at all levels must strive to formulate comprehensive long-term integrated networking strategies for complete school change, that is they must seek to optimally use networking resources in their ongoing efforts to promote systemic change and school reform.

*(Continued on page 4)*

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**President Clinton and Vice President Al Gore with Students. Source: The President's Educational Technology Initiative Page Location: http://www.whitehouse.gov/edtech.html**

*"Setting goals for U.S. education is one thing. Reaching them is another. And the only way it will happen, the only way we have a ghost of a chance of getting there, is if we push through a fundamental, bone-jarring, full-fledged, 100 percent revolution that discards the old and replaces it with a totally new performance-driven system."*
—Louis V. Gerstner, Jr. CEO IBM. Remarks at the National Governor's Association Meeting Burlington, Vermont, July 30, 1995.

****ADVENTURE WEB SITE OF THE MONTH VISIT TERRAQUEST****

**A Young Explorer on Galapagos Islands**
Source: TerraQuest, Virtual Expeditions
Location:http://www.terraquest.com/assignment/assignment.html

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# NetDay'96—A Day In the Sun or The Dawn of a New Age

On March 9, 1996, over 17,000 volunteers brought their enthusiasm, experience, and physical strength into schools scattered across the state of California for the purposes of pulling wire, and "connecting" schools to the Internet. As a media event and photo opportunity for prominent politicians and corporate leaders to advance their vision of educational networking, NetDay'96 was by all measures a success. Already there are plans for NetDay's in other states and even in other nations. However, as a catalyst for school networking and more importantly a catalyst for school change, the jury has not even been born. What is certain is that the "systemic" success of this event will largely be determined in the weeks, months, and years ahead through the blood, sweat and tears of those grassroots social activists and educators who are not interested in hardware, in wires, or in software as much as in challenging educational systems and educational leaders to evolve and grow.

The numbers of schools and school districts around the country clamoring for Internet access is growing at a dizzying pace. The numbers of schools obtaining access to the Internet continue to soar. The numbers of schools putting up web sites is steadily growing. Although impressive and to some extent welcome, these numbers are misleading, conceal some certain and potential pitfalls, and distract government, community, and educational leaders from the more critical challenge of promoting paradigm shifts in education in part by means of a comprehensive and thoughtful deployment and integration of networking technology.

It is perhaps ironic that many of us who have long supported, promoted and worked diligently for networking in schools are now questioning the sanity of netpoliticking a la Netday'96. Some will suggest we've grown too old and jaded. Others will suggest we're envious of the new arrivals who are even more zealous in their missionary efforts. Only to each other dare we share our secret fears and reveal our recurrent nightmare of The NetDayed School , the NetDazed Society, and lemmings plunging to the sea.

From the beginning, we understood both the promises and perils of promoting school networking. Our voices were few, but we believed in the power of our message and we believed that our numbers and influence would grow . We also believed that somehow we could harness the power of networking, not the power of computer networks, not the power of wires, synchronizing modem strings, or glitzy client software but the raw and marvelous power of people coming together for a purpose, and the only purpose in our minds that justified this effort and this sacrifice was to change schools into better places of learning.

Although we were and are identified as advocates of school networking, in fact, we were and remain primarily heralds of change. Many mistook and mistake our voices for the voices of technologists but we were and are first and foremost humanists. From our desert classrooms and our legionnaire research and activist outposts, we called and continue to call for a "sane" systemic acceptance of change. However, we are now frankly worried because there are signs that the big bureaucracy might end up "wired" but otherwise "unchanged", and more worrisome many schools may end up "wired" and "worse-for-the wire", and many more teachers and students hooked to the Internet but chained to the walls of a darker and more dismal cave.

Those of us who care about schools and public education, must not be afraid to ask the hard questions, "When the wires are all strung, and the schools "connected" to the Internet, will teachers and learners have gained any truly measurable benefit?, Who will benefit the most?, and Will the system of education be changed for the better? " Those of us who are serious in our efforts to promote "successful" school networking must clearly define our "criteria of success" and resist the temptation to in any way compromise our commitment to teachers, to learners, and to learning.

Let us recognize that if we compromise now we are no different than the Yankee Peddler Reformers of the past who teased schools and society with their cures and trinkets and their grandiose plans of school reform, and who in the end, when it mattered most, were gone in search of new markets.

*(Continued on page 3)*

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# The Promises and Perils of NetPoliticking

The masses are unknowing but we know, we understand that wires alone do not , cannot, and will not change attitudes nor fundamentally change schools. Wires in this respect are not different than stand-alone computers or an abacus.

In our past actions and words, we have supported numerous "netdays". In our efforts to promote networking, we have parried the difficult questions and avoided the hard debates that can only be won through persistent, persuasive and passionate communication of real issues. We have even celebrated getting one machine connected to the Internet in a school. We have averted our attention when technologists and in some cases our disciples have promoted technology first with little or no thought about learning or systemic change.

However, the climate has changed and the stakes are higher now than ever before. As a society, we have arrived at a critical juncture and teachers and learners are the chosen sacrificial lambs in this great social experiment. NetDay'96 was a defining moment, perhaps not unlike Woodstock'69. One way or the other, it will define our generation; what we valued, what we were willing to give away, how well our visions fared when the music stopped, the mud dried off our shoes, and we made our way back home.

**The goal is better learning, stupid, not stringing wires!**

Historians will judge whether or not in our zealous efforts to woo the masses and the recalcitrant educational bureaucracy, we banished teachers and learners to a more inhospitable and barren learning wasteland than the ones they currently struggle for survival within, or whether we seized this moment and took to the roads to sing even more loudly and clearly their song, the song of the liberated learner and teacher.

In the euphoria of Netday'96, let us not forget why we first raised our voices and called for school networking, and let us not turn our backs on those who need us most. We cannot let ourselves and society be content with mere wires in a ceiling, one machine "connected" to the Internet, and classrooms built on deception and disillusion—we've come too far to yield to inertia and we owe too many teachers and too many learners across this globe much more than our complacency and willingness to settle for less than their legitimate entitlement.

Let the politicians, publicists and businessmen use their broad stroke pronouncements to declare the arrival of the New Dawn, but those of us who know better must somehow make our voices heard over all this din. Let the politicians, publicists, and businessmen make their compromises for their own gain, but let us settle for nothing less than the liberation of all teachers and learners. The politicians, the publicists, and the businessmen are not our enemies but bureaucratic inertia and societal ignorance is.

The lemmings are now beginning to run from their wooded forest homes, and let there be no mistake, right now their course is towards the fiords. It is not too late to stop their mad dash and to guide them to a new destination, to a better home, and to a brighter destiny. We can chose not to do anything and may become one of those mysterious surviving lemmings that stand on some distant cliff and watch the armies of lemmings plunging into the sea. It is certain that some of those surviving lemmings probably smile in a sickeningly self-assured manner as they witness the death plunge while others cry or call out in a deep and resounding dirge.

Either fate is ours—those who somehow intuitively have a vision of the fiords as well as a vision of another world far away from the precipitous cliffs. We do, however, have another choice and another possible destiny, and that is to do what we set out to do and guide the lemmings out of the woods and to a clearing, far away from the dangers of the fiords.

Change for the sake of change is as meaningless as no change. Deploying technology with the assumption that positive change will follow is foolhardy but this is exactly what we do when we speak half-truths, pull wires in schools where there are no computers, design masterful local area and wide area networks with no thought to teacher training and user support, and extol the virtues of networks without carefully explaining the fundamental rationale for "educational" networking.

*"The goal is better learning, stupid, not stringing wires."*

The time has come to demand nothing less than a thorough and comprehensive a "learner-oriented" strategy of change. Yes, we want networks in schools but will will not stop until every teacher and every learner is "connected" and liberated to network as dignified lifelong learners.

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# CURRENT CONSTRAINTS ON NETWORKING

*(Continued from page 1)*

## *The Impetus for Networking*

*"I came here to San Francisco today to issue a challenge to America to see to it that every classroom in our country — every classroom in our country is connected to the Information Superhighway."* (*Remarks by President Clinton on Education Technology and Connecting Classrooms* made on September 21, 1995 at the Exploratorium in San Francisco, CA.)

Across the country, a growing number of "networking" or "net-aware" citizens are "challenging" schools to get "connected." President Clinton and Vice President Gore have offered their vision of the "connected" schools of the future, and other national, state, and local leaders are also calling for companies and communities to work with schools to help them "informatise.". Prominent businessmen such as John Gage of Sun Microsystems, Bill Gates of Microsoft Corporation, and Louis Gertsner of IBM Corporation have undertaken major corporate and personal initiatives to help support this effort. John Gage championed NetDay'96 in California, Bill Gates donated his profits from his best-selling book, The Road Ahead, to a major school technology initiative, and Louis Gertsner is co-hosting the 1996 National Education Summit.

There are also a small but growing number of internal change agents, representing teachers, school librarians, and school principals, calling for the diffusion of networking capacity in schools and classrooms. Educational researchers in universities, non-profit organizations, government agencies, and corporate research think tanks are developing new online content and offering guidance for how and why K-12 schools should embrace networking as a means for systemic reform. An increasing number of parents across the country are raising their voices and offering their expertise and time to help schools become technology-infused enterprises..

Educational leaders are under increasing political pressure to "acquire" and "deploy" networking technologies in the near term, and after a minimal grace period will be under major pressure to demonstrate successful "application." Most educational leaders are aware that the success of their "technology" programs will ultimately be judged by student performance, but many are unaware that the demands of a new workplace and the very nature of the new technology require not only new ways of teaching and learning, but also new learning assessments and perhaps even more fundamentally new ways of managing and conducting the education "business." The decision to embark on a networking program must therefore be fundamentally grounded on a recognition and willingness to boldly go forward with school and school system reform.

## *Limited Visions of School Networking*

Many educators are offering limited technology visions that serve only to deploy new technology into traditional classroom settings with no real thought about teacher training and professional development, user support services, and systemic impact. Moreover, many only rely on their tried and true traditional methods of technology funding, strategic planning, and technology acquisition. As a result, the cost of technology acquisition, deployment, and application is predictably higher than in other "knowledge" industries, particularly those that have more experience and familiarity with networking business culture and products. The net result may well be a looming "crisis" in America's schools resulting from major expenditures of capital for new technical capacity that is in some cases, woefully underutilized, outmoded before installation, poorly supported and misused in application with major costs to students, teachers, other "workers" in the system, and communities.

## *A Recommended Vision Quest for Educational Decision-Makers*

It is highly recommended that any educational leader interested in acquiring networking capacity undertake a speedy but focused "Vision Quest" to find within a holistic vision of how networking technology can be introduced into the system or school enterprise for the fundamental purpose of producing capable lifelong learners, and effective and content teachers and support staff. From the onset, it is important that educational leaders accept that they are undertaking a major challenge that has no historical precedent in the history of education. They are pathfinders and pioneers that will create the new models of teaching and learning, and conducting the education "business." They need not, and should not go the way entirely on their own. It is important that they work with other leaders within their own ranks, and from higher education, business and government to understand the significance of societal informatisation and the role of the education "industry" in the emerging Information Society. It is also important that they enlist the support of their local communities to help them define their vision and then help them take the necessary steps to achieve that "collective vision."

## *The Five-Fold Path to A Networking Vision of School Change*

The five-fold path that is offered here is not a strategy for implementing school change or a plan for technology diffusion, but is a way for finding a leadership vision or rationale for using networking in schools and school systems. Without this vision, there is little likelihood that networking will be used successfully or result in beneficial changes to the school or school system.

*(Continued on page 5)*

*The same technological forces that will make learning necessary will also make it practical and enjoyable. Corporations are reinventing themselves around the flexible opportunities afforded by information technology. Classrooms will have to change as well.* (The Road Ahead, Bill Gates, Viking, New York, 1995, p. 184)

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# A NETWORKING VISION QUEST

*(Continued from page 4)*

**I. Understand the Difference Between Networking Technologies and More Isolated Instructional Technologies.**

Networking technologies are based on the principles of "openness," "connectivity," "fungibility," "scaleability," and "churnability." Other technologies previously introduced into schools were primarily isolated, proprietary, and basically unchanging in nature. In the past, technology acquisition decisions were in part based on long-term service and maintenance contracts, the underlying assumption being that the technology had a long "shelf-life." This is not the case with networking technologies, with the possible exception of the internal wiring.

The TCP/IP protocol that supports open network systems, or "internetworking" is an *open* standard that allows multiple computer platforms such as UNIX, Macintosh, and Windows to "communicate" together. Internetworking software and hardware development and marketing is fundamentally driven by an open rather than proprietary " competitive" model. This is in marked contrast to earlier "enterprise" networks that employed "close" or "proprietary" software and hardware technologies. The result of the "open" nature of the technology is a much more competitive market structure that supports multiple consumer options and solutions.

Networking technologies are also based on "*connectivity*." The kind of "connectivity" can be "inter" or "intra" and/or a combination therefore, depending on the enterprise and industry, and primarily applications. In any case, the optimal network design and application is one that is highly distributed in nature, allowing for multiple tasking, optimal collaboration, open communication, and multiple applications throughout the enterprise or system.

Networking technologies are increasingly "*fungible*," that is component parts can be easily replaced. Hardware can, and is expected to be upgraded on a regular basis, as is software. Because of the open nature of the operating systems, it is easier to replace isolated machines and server/client softwares with other competing machines and softwares.

Networking technologies should be "*scaleable.*" that is designed to grow and serve an increasing number of users and an increasing degree of tasks and functions. The basic design must allow for growth but should be introduced in reasonable scale, based on existing user capabilities and system requirements.

Finally, networking technologies are "*churnable,*" that is under constant development, upgrading, and transmutation. Typically, networking client software undergo monthly, if not weekly, modifications. The hardware is more stable but there is fairly constant development at this point in the industry. This kind of technology is totally new to the education community, and requires a new kind of management, degree of user support, and new kinds of funding mechanisms.

**II. Understand The New Workplace and the Role of Technology**

*"Today's workplaces and communities — and tomorrow's — have tougher requirements than ever before. They need citizens who can think critically and strategically solve problems. These individuals must learn in a rapidly changing environment, and build knowledge from numerous sources and different perspectives. They must understand systems in diverse contexts, and collaborate locally and around the world."* "New Time Demand New Ways of Learning" in *Plugging In* by Beau Fly Jones, Gilbert Valdez, Jeri Nowakowski, and Claudette Rasmussen. (http://www.ncrel.org/ncrel/sdrs/edtalk/newtimes.htm)

The corporate use of the Internet is a relatively new phenomenon. However, most knowledge industries are major technology users and are experienced in computer networking, systemic computer applications, and computer-based information gathering, storage, retrieval and distribution. Most knowledge industry managers and workers grasp the significance of technology and the necessity of collaboration to the creative and knowledge-building processes. However, the Internet and its unique characteristics offer new challenges and opportunities. Companies that have employed more centralized management and communications systems will experience greater stresses and strains than industries that are more entrepreneurial and decentralized in management structure.

The distributed nature of "internetworking" and the new TCP/IP-based "intranetworking" is highly supportive of an open communications system. In industries that have had more hierarchical management and power structures, this can result in changes in the management structure, reallocations and realignments of power, as well as changes in the very nature of some positions, the emergence of new job routines, changes in job responsibilities, performance assessments, and the systems of worker supervision and accountability. Generally, the distributed system is supporting a more decentralized and streamlined management model and a more empowered creative and adaptive workforce. A whole new system of management style is emerging that is based on managing empowered workers.

The client/server architecture can support more frequent and new collaborations and provides a new medium for training, interpersonal communications, inter and intra-departmental collaborations, and system and worker support. Increasingly, the world wide web is useful for sharing and displaying internal as well as external corporate information. Both networking and multimedia technologies are impacting on corporate training programs; increasingly Interactive technology-based training is supplanting class-room seminars and tutorials.

*(Continued on page 10)*

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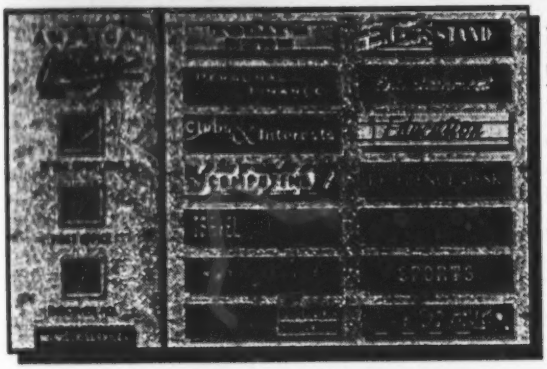
# INFOBYTES

## America Online Woos The Internet Culture



America Online, the company that pioneered a commercial community of learners, is launching a new effort to strengthen its Internet strategy. In the last several weeks, AOL announced new strategic alliances with Netscape, Sun, and Microsoft Network.

On March 11, AOL and Netscape announced a marketing and technology alliance. AOL licenses the very popular Netscape Navigator to be the standard browser for use on AOL and as the standard browser for GNN, AOL's Internet service. AOL members will have an option of using the Netscape Navigator, although Microsoft's Internet Explorer will be the standard.

Subsequently, on March 12. AOL and Microsoft announced that AOL licensed Microsoft's Internet Explorer to be the standard built-in Web browser for AOL members. As part of the arrnagement, Microsoft will incorporate AOL software into Windows 95 and future versiions of Windows. This will allow Microsoft Windows customers to effortless access AOL via an "online services" folder on the Windows 95 desktop.

AOL also reached an agreement to license Sun Microsystems's Internet programming language Java. This will allow AOL to support more dynamic, interactive and real-time content and applications.

For more details about these alliances see:

*A Letter from Steve Case*, March 13, 1996 found at URL: http://www.aol.com/about/updates/1996/960313.html
*AOL, Microsoft Announce Far-Reaching Strategic Partnership* , A Microsoft Press Release, March 12, 1996 found at URL: http://www.microsoft.com/corpinfo/press/1996/mar96/aolpr.htm
*AOL and Netscape Announce Marketing and Technology Alliance*, A Netscape Press Release, March 11, 1996 found at URL:http://home.netscape.com/newsref/pr/newsrelease104.html

## AT&T & MCI Woo Residential Internet Customers —Murphy Brown Is Silent

AT&T and MCI, the two big telephone rivals, are going head to head in their PR efforts to woo new customers to their Internet services. AT&T WorldNet Service officially opened for business on March 14, 1996.

AT&T Worldnet is offering AT&T Residential long-distance customers five free hours of dial-up Internet access a month for an entire year. Free installation software is provided. Non-AT&T customers are also invited to access the Internet

AT&T Worldnet will provide ATT&T long-distance residential customers who signed up by December 31, 1996 with five hours of free Internet access for the entire year. AT&T customers who desire unlimited Internet access are offered the competitive rate of $19.95/ month for a dial-up access account. Non-AT&T customers can also use Worldnet services for a slightly higher fee, a rate of $24.95/month for unlimited dial-up access. All Worldnet subscribers will be provided with an AT&T version of Netscape Navigator software browser.

AT& T Worldnet customers will also be able to quickly and easily gain access to America Online, beginning early this summer.

InternetMCI, which opened its Internet doors over a year ago, is soon to offer its MCI long-distance telephone companies a special introductory rate for dial-up Internet access via internetMCI.

For more information about **AT&T's WorldNet Service** see:
**URL http://www.att.com/worldnet/**
For more information about **internetMCI** see:
**http://www.mci.com/fornet/access/indexacc.shtml**

Sprint, which like MCI is a major Internet backbone provider, has not yet announced any plans to enter the residential Internet competition. Sprint's strategy is to provide Internet access to carriers, governments, and businesses. For more information about **Sprint's Internet policies see URL:**
**http://www.sprint.com/internet/internet.html**

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# INFOBYTES

## Microsoft Launches the Second "Imagine the Magic" Contest

Microsoft invites kids from the ages of 6 to 11 to imagine what the "coolest" computer could do in their second "Imagine the Magic" contest. Kids can write, draw. paste or paint.their concept of the super cool computer. Six national Grand Prize winners will receive a trip to Microsoft's "Magic Factory" in Seattle and the opportunity to participant in the second annual Kids' Technology Summit. They also get a chance to meet Bill Gates, Chairman of Microsoft and lots of other great prizes. Fifty semifinalists will win selected Microsoft Software.

Teachers are invited to encourage the students in their classes to participate in the contest. Teachers of any of the grand finalists will get a Gateway Destination multimedia system and a library of Microsoft software for the classroom, and the teacher and the students will be spotlighted in Instructor and Electronic Learning magazines next fall.

Entries must be received by May 15th, 1996.

To find out more about the contest and to submit entries, visit the special site set up by Microsoft at URL:

**http://www.microsoft.com/kids/imagine/**

## THE NSF OFFERING TWO-YEAR INTERNET CONNECTION GRANTS

The National Science Foundation is offering two-year grants to assist K-12 institutions, vocational technical schools, public libraries and museums, post secondary educational institutions,and consortia of such organizations hook up to the Internet.

- K-12 institutions will be offered $15,000 grants for innovative technologies for Internet connections.
- Postsecondary institutions will be offered $20,000 grants to establish initial access for institutions without Internet connections.
- Awards amounts will be negotiated for Consortia to connect small colleges, K-12 institutions, two-year colleges in a novel way, negotiated awards.
- High performance network connections will be awarded $350,000 grants.

DEADLINES: May 15, 1996 and July 31, 1996.

For details contact Mark Luker, NSF, 4201 Wilson Boulevard, Room 1175, Arlington, VA 22230, telephone 703 306-1949, or e-mail:mluker@nsf.gov and ask for instructions to submit a proposal for the Internet Connection Grants.

For more information about the National Science Foundation grant programs visit the NSF web site at: http://www.nsf.gov/

## Microsoft and MCI Launch Schools-on-the-Web

Last month, Microsoft and MCI Communications launched the Schools-on-the-Web program at FETC—The Florida Education Technology Conference. This program aims to encourage schools to design their own web pages by providing 10 megabytes of server space free to any school that desires to have a web presence and already has an internet connection and an e-mail account. Schools that already have web sites up can also participate in the program by registering their web site with the Global Schoolhouse International Education Sites Registry. All U.S. schools that register a new or existing school home page with the Global Schoolhouse by May 17 are eligible to complete for $100,000 in software, hardware, training and support for their schools and classrooms.

For more information about the Schools on the Web Program see:

**http://dm.eden.com/fetc/home.htm**

For more information about the Schools on the Web Contest see:

**http://dm.eden.com/fetc/contest.htm**

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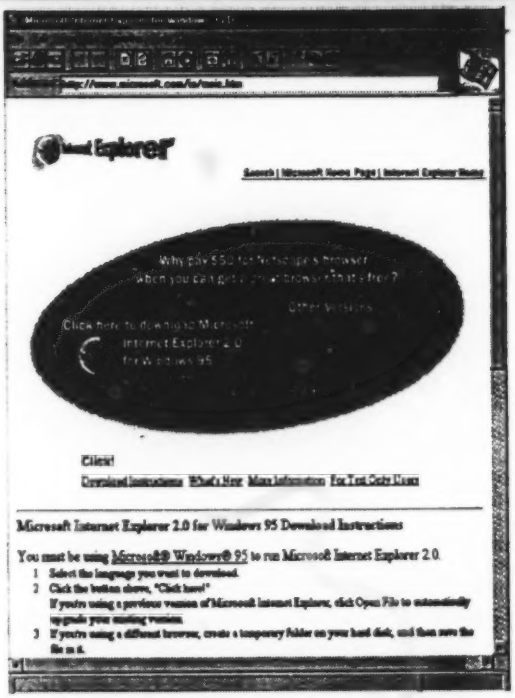
# Microsoft's Internet Jump Start CD & Its Power Tools

**Microsoft is aggressively seeking to position itself as a leader in providing Internetworking tools and resources to the education community.** In February, at the Florida Educational Technology Conference in Orlando, one of the largest educational technology conferences in the world, Microsoft announced several major initiatives and released the Internet Jump Start CD-ROM for educators. The CD-ROM is free of charge to educators and contains a number of extremely useful products and tools including:

- Microsoft's Information server, Microsoft's web server publisher
- A special release of Microsoft's Windows NT Server that supports unlimited connections to the school from the Internet via the Internet Information Server
- Microsoft's Internet Assistant, an add-on Internet publishing too to Microsoft Word, for both the Windows operating system and Macintosh, that schools can use to create HTML pages.
- Microsoft's Internet Explore web browser
- ForeFront's WebWacker, an innovative off-line browsing technology for Windows and Macintosh that enables educators to capture groups of web pages for subsequent use on a classroom computer that does not have Internet access
- Microsoft's K-12 web site with its resources for educators including Teacher Activity Guides
- Global Schoolhouse web site, where educators can access new curriculum ideas and other useful information

To request a copy of the Microsoft Internet Jump Start CD, educators can call the Microsoft Sales Information Center at: +1 800-426-9400 to receive a sign-up form. CDs are limited to one per school while quantities last.




**A Snapshot of the Internet Explorer Home Page**
**Web Location: http://www.microsoft.com/ie/**

Microsoft's Internet Explorer is giving Netscape a major challenge. It is being freely distributed and is available for Windows 3.1, Windows NT operating systems, Macintosh, and in over fifty languages for Windows 95.

The Internet Explorer is slick and easy to use for both Web surfer and Web developer. It supports all of the popular HTML extensions such as tables, forms, and background sounds. For the complete listing of HTML tags supported by the Internet Explorer visit the WWW page located at: http://www.Microsoft.com/ie/author/htmlspec/ie20html.htm and the

*(Continued on page 9)*

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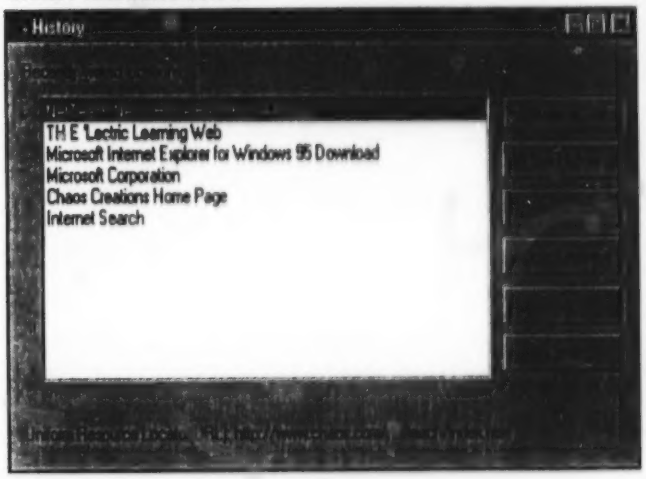
# Jump Starts the Education Community Onto the Internet

HTML specification page at: http://www.microsoft.com/ie/author/htmlspec/html_toc.htm . IE also supports numerous multimedia extensions such as inline videos and scrolling marquees, and #-D World with VRML.

It is very easy to use for Web Surfers, and has the fastest display speed which is particularly useful for slow connections. There are some unique features such as the history feature illustrated below.




This allows you to quickly go back to the sites you most recently visited, and reduces the need to clutter up your favorites file by using it as a "bookmark" device.

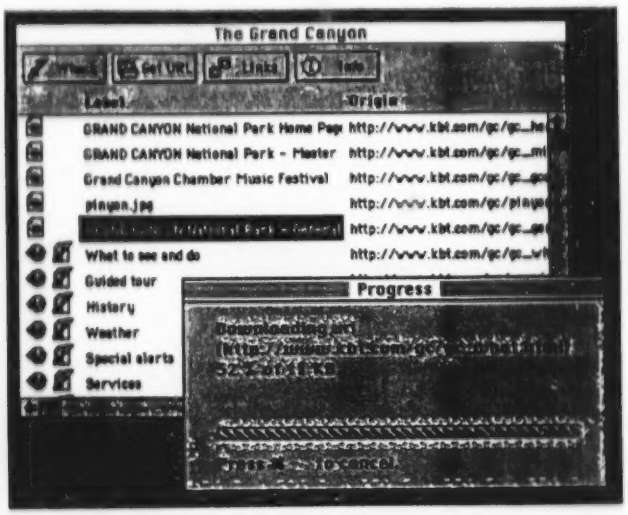
To download a free copy, go to the world wide web site located at: http://www.microsoft.com/ie/ie.htm:

## *A Word About Web Whacker*

Microsoft licensed the Windows operating system and MacIntosh versions of Web Whacker from the ForeFront Group. Web Whacker allows students to fully simulate real-time web browsing. It eliminates the connection time and costs for on-line browsing and allows teachers to select the Internet content appropriate for students and relevant to various curriculum units.

Using the WebWhacker tool an educator can download or "Whack" a single Web page, groups of pages, or entire web sites, including text and images and stores these "whacked" pages which can be loaded onto a local desktop computer that is not connected to the Internet.

There are versions available for Macintosh, Windows 3.1, and Windows 95. You can preview and download free trial copies at the WebWhacker Home Page located at URL: http://www.ffg.com/whacker.html




**A SnapShot Capture of Internet Explorer**
**Source:http://www.ffg.com/gifs/wwmac1.screen.jpg**

In addition to WebWhacker, Forefront has two other potentially very useful tools for educators, Roundtable and GrabNet.. These are not bundled in the Microsoft Jump Start CD but can be found at the Forefront Internet Software page located at: http://www.ffg.com/internet.html. Roundtable combines text-based chat with the capability to dynamically share images, documents, URLS, video, audio and more, in a freeform workspace or "canvas." GrabNet allows one to "grab" information from the World Wide Web, including images, text, and URL's, for reuse, navigation and organization within a customized collection of hierarchical folders stored on a local desktop. Both these products can be downloaded for free trial.

For more information about Roundtable see URL:http://www.ffg.com/rt.html

For more information about GrabNet see URL: http://www.ffg.com/grabnet.html

For more information about Forefront's Web Whacker visit Forefront's Web Site at URL:http://www.ffg.com/home.html

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# Networking In The Classroom

*(Continued from page 5)*

### III. Understand The Potential Impact of Networking Technology on Schools and Classrooms

*"Networking has the tremendous potential to break down the traditional isolation of the classroom that exists for students and teachers. When computers are networked, teachers and students can share information, coordinate projects, ask for advice, and access resources outside their classrooms, buildings, or town."* ("*Impact on Key Areas of American Life and Work*, A Nation of Opportunity, Realizing the Promise of the Information Superhighway, A Final Report by the U.S. Advisory Council on the National Information Infrastructure, 1996, Source: http://www.benton.org/KickStart/nation.impact.html)

Most schools remain fairly isolated from their local communities and more so from the global community. Students and teachers are "locked in" to their age or ability-based classes, their rigid centrally-controlled curriculum, and to a rigid routine and structure. There is little opportunity to engage other learners and teachers within the building, and even less so outside the building. School principals are perhaps the most isolated, with little opportunity to reach to students, teachers, and parents in anything but a very formal manner. Distributed networks will challenge these traditional paradigms and can lead to a more open learning and teaching environment as well as to a more decentralized and open management system.

Decentralized information systems can provide managers with more timely and more accurate information on which to base strategic and tactical decisions. However, to realize this benefit, students, parents, teachers and staff must feel confident that management respects their " field intelligence" and is willing to include them in the decision-making process. The most effective management style is one that seeks to "manage" empowered workers rather than to "control" the rank-and-file.

*The experience of schools, districts, and states that are advancing toward high-performance schooling provides important lessons for educators wishing to teach the SCANS know-how:*

*Teaching should be offered "in context," that is, students should learn content while solving realistic problems. "Learning in order to know" should not be separated from "learning in order to do."*
*Improving the match between what work requires and what students are taught requires changing how instructions delivered and how students learn.*
*High performance requires a new system of school administration and assessment.*
*The entire communit, must be involved.*

SCANS PRINCIPLES AND RECOMENDATIONS PAGE. SCANS/2000. The Workforce Skills Page. By John Hopkins University, Institute for Policy Studies. 1996. URL: http://www.jhu.edu/~ips/scans/ (Viewed March 25, 1996)

*Mission for Educational Technology in New Mexico Schools*

*Develop the human and technology infrastructure necessary for students, who are*
*ready for school and workplace challenges in a society that is information driven and global in its demands*
*able to make thoughtful use of technology to access information, and*
*able to construct meaning, develop new knowledge and effectively and efficiently communicate understanding*

Tomorrow, Technology in New Mexico Schools, 1995. Source: http://www.education.lanl.gov/RESOURCES/OTR/Plan/Tomorrow.html

In the learning component, networking can provide new opportunities for "engaged" learning. Students can use this technology to construct new knowedge, access global information, and share original work and research locally and globally. Already there is growing evidence that networking does "empower" students to learn in new and exciting ways.

In the teaching component, networking opens new professional horizons for teachers. Teachers can use networks to reach out to other teachers across the globe in order to create new learning experiences, new curriculum, and new learning and working conditions. Teachers can also use networks to undertake their own research and their own quests for new sources of knowledge on a global basis. Finally, teachers can use networks to publish their work and promote more effective learning across the country, and indeed the globe.

### IV. Understand The Likely Holistic Impact of Networking on the School "Enterprise" or the School "System"

Even though the most important focus and rational for networking in classrooms and schools is on teaching and learning, it is important to understand that networking can, and will likely impact on all other components of the school enterprise or school system in an equally major way. Networking can fundamentally change the "business" of education, including how resources are allocated, how priorities are set and decisions made, how decisions are communicated, how tasks are

*(Continued on page 12)*

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## MAY 1996

**2-4 May. 1996 10th Annual VSTE Technology Conference**

Hotel Ro... e Center, Ro... more informa...

darkin... +1 804-320-34...

**6-11 M... World Wide W...**

Paris, F... er web users, developers, researchers from around the world. For registration and other information send e-mail to: **www5-info@inria.fr or visit URL: http:///www.w3.org/pub/Conferences/WWW5/fich_html/participation.html**

**10-12 May. Community Access Goes Digital: Building Our Communities in the Information Age featuring CYBERSCHOOL**

Champlain College, Burlington, Vermont. Hosted by the Chittenden Community Television (CCTV), Old North End Community/Technology Center, Lake Champlain Access Televsion, Vermont Educational Cablecasters and Vermont Access Network. This conference is intended forpublic access producers, volunteers, staff and board members who work with community based video and computer ... as also of special ... librarians, and ot... tion contact:

Mari... rence
Orga... 45, Fax: +1 80...
maris... web site at: ht... ~onec...

## JUNE 1996

**11-13 June. NECC'96. Call of the North**

Minneapolis Convention Center, Minneapolis, MN. Hosted by Technology and Information Educational Services (TIES) and Sponsored by National Educational Computing Association in cooperation with University of Minnesota, St. Cloud University, and Twin Cities AECT. For more information write to:

**NECC'96/TIES, 2665 Long Lake Road, Suite 250, Roseville, MN 55113-2535**

**17-22 June 1996. ED-MEDIA'96 with ED-TELECOM'96.**

Boston, Massachusetts. This joint world conference, which is sponsored by the Association for the Advancement of Computing in Education (AACE), spans all disciplines and levels of education and attracts leaders in the field from over 50 countries. For more information:

**On the World Wide Web: http://aace.virginia.edu/aace/info.html or E-mail: AACE@virginia.edu; Tel: +1-804-973-3987; Fax:+1 - 804-978-7449, AACE home page: http://aace.virginia.edu/aace**

**25-28 June 1996 INET'96, The Internet: Transforming Our Society Now.,**

Montreal, Canada. INET'96, the 6th Annual Conference of the Internet Society. For further information: Send e-mail to: inet96@isoc.org, URL: http://www.isoc.org/conferences/inet96/

## JULY 1996

**6-12 July. I*EARN's Third Annual International Conference**

Hotel Summer Hill in Budapest, Hungary. The conference will represent the collective talents of I*EARN teachers, youth-service facilitators and students from across the globe. Hundreds of participants will meet in Budapest to further the work of educational telecommunications and to use the face-to-face meeting to build greater personal links with international colleagues. Requests for further information or conference registration can be forwarded to:

**The I*EARN Global Secretariat at <iearn@iearn.org>**

**24-27 July. Second International Conference on the Learning Sciences, ICLS 96.**

Northwestern University, Evanston, Illinois. Hosted by the Association for the Advancement of Computing in Educatio... together pro... and indus... insights ... ing to se... special f... vations ... ing. For...

**http://w... icls96.h... http://a... E-Mail: ... Tel: +1-804-978-7449**

## NOVEMBER 1996

**21-22 November 1996. Building An Educational Experience Through Applications of Computer-Based Technologies.**

St. Paul, Minnesota. Radisson Hotel Saint Paul. The University of Wisconsin-Stout is designing this conference for university and technical/community college faculty using or seeking to use computer-based instructional applications with non-traditional students. For further information about participation contact Deanna Applehans and Christopher Smith at: **Tel: +1 715-232-3385, Fax: +1 715-232-2693, E-Mail:-outreach@uwstout.edu. See WWW URL: ... jor.uwsto... stpa...**

## DECEMBER 1996

**5-8 ... ifth Inte... n Tele... u-catio...**

Tamp... er-rey, Nuevo Leon, Mexico. Presented by ISTE, FACE, and SENI. For more information visit WWW: **http://isteonline.uoregon.edu**

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# NETWORKING FOR SYSTEM GROWTH

*(Continued from page 10)*
implemented and assessed, and how the overall criteria for system performance. Economics will necessitate hard choices and assigning priorities, and there is tremendous uncertainty how any given choice regarding networking will impact on all or any given area of the system. What is certain is that in such a dynamic and chaotic system, any significant change to a component will likely have a systemic effect and necessitate a rational response and adjustment. In this kind of "change" environment, training and user support services have a major role to play in ensuring that the system functions well and successfully responds to the technology. Not only will training and user support be necessary to achieve comfortable technology usage but more importantly to deal with changes in work cultures caused by the introduction of the technology as well as the increases in the level and use of information.

### V. Understand School Networking Is All About School Change

The obvious is often that which is most difficult to accept, and this appears to be the case in regards to educational networking. The obvious vision of a "networked" school is a "changed" and "transformed" school. It is a school necessarily different than any that currently we, as a society, are familiar with. Perhaps we are all somewhat reluctant to yield to a new vision of a school because ironically we all have some degree of nostalgia about our "schools," even if we recognized many shortcomings, we all to varying degrees find comfort in what is familiar. It is difficult to bear witness to a definitive change, and even more difficult to play an active role in that process of change..

Educational leaders understand that society is demanding school reform, and they must also understand that technological change and historical forces have converged in this time and in this society, and that networking will certainly play a fundamental role in the schools of the future. Educational leaders will work with others in society to define that new place called school, but if they are serious about reform, then them must also be serious about networking and how they choose to introduce networking into their schools and school systems. Any strategy of networking must fundamentally be a strategy of comprehensive and holistic educational reform.

Recommended Web Sites:


- ***A Nation of Opportunity, The Final Report of the United States Advisory Council on the National Information Infrastructure,*** 1996. URL:http://www.benton.org/KickStart/nation.home.html
- ***KickStart: Connecting America's Communities to the Information Superhighway,*** 1996. URL:http://www.benton.org/KickStart/
- ***Educational Summit, Briefing Book, 1996.*** URL:http://www.summit96.ibm.com/brief/papers/index.html
- ***Plugging In, Choosing and Using Educational Technology,*** Council for Educational Development and Research, http://www.ncrel.org/ncrel/sdrs/edtalk/toc.htm
- ***The Switched-On Classroom,*** The Massachusetts Software Council, 1994;http://www.swcouncil.org/switch2.html
- SCANS/2000, The Workforce Skills Home Page. URL:http://www.jhu.edu/~ips/scans/images



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